Railways of Australia

NETWORK

Vol. 16 No. 7 September 1979 Price: 60 cents

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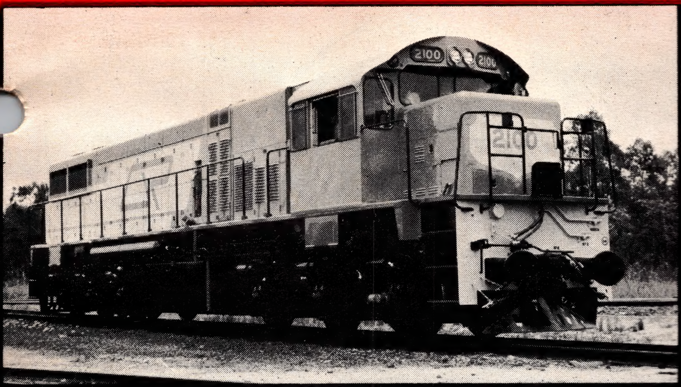

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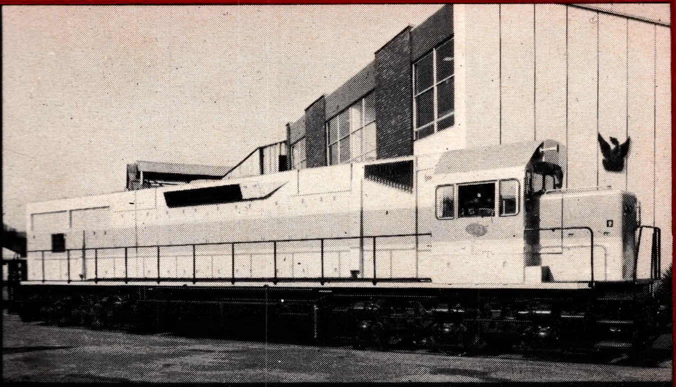

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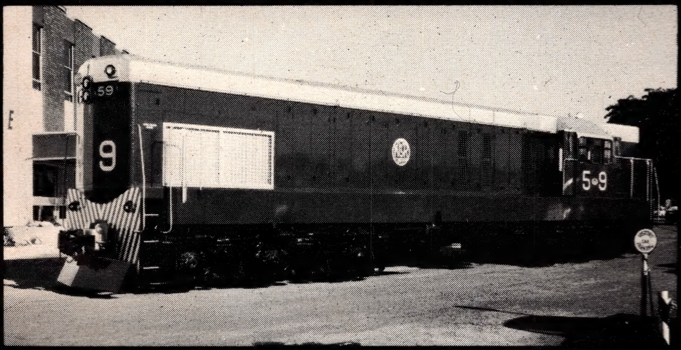

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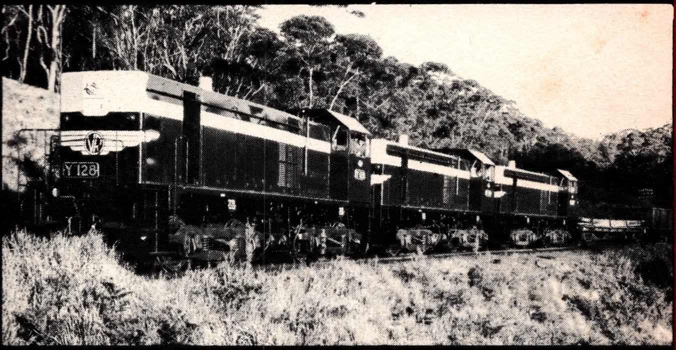

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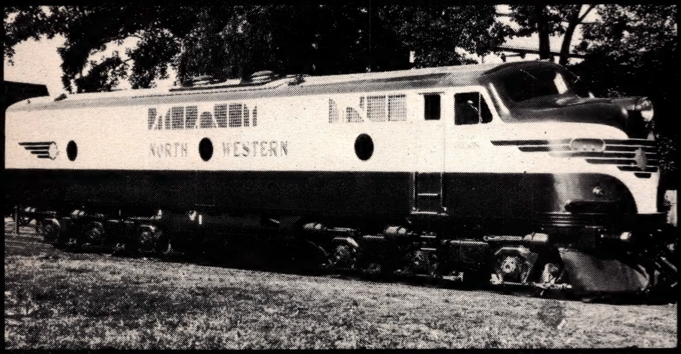

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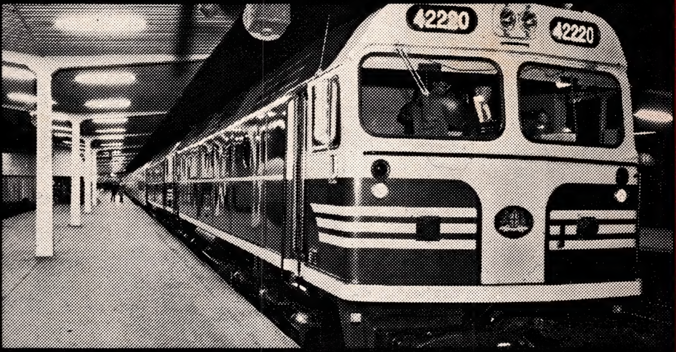

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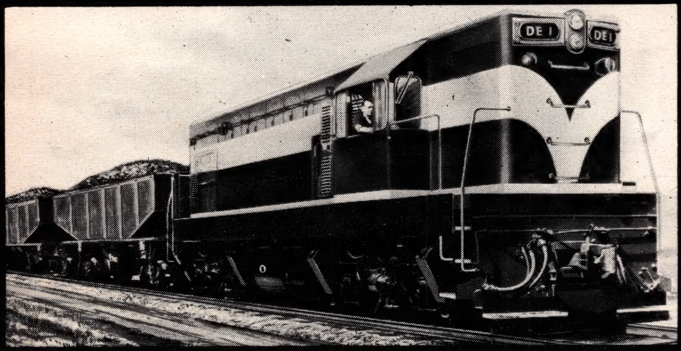

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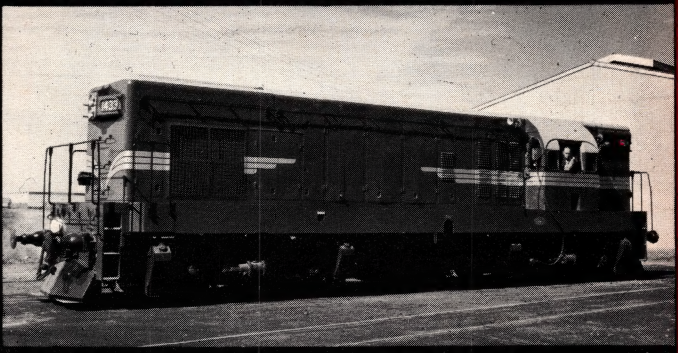

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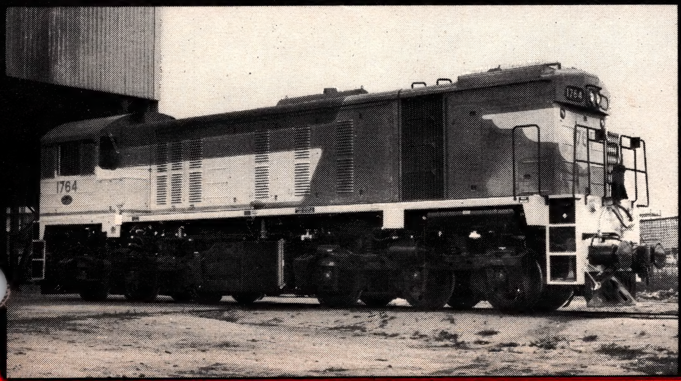

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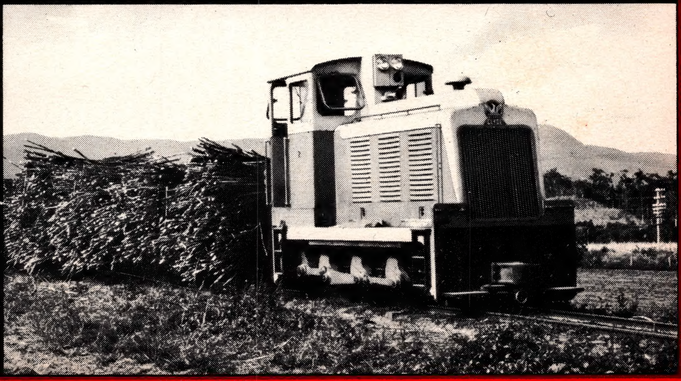

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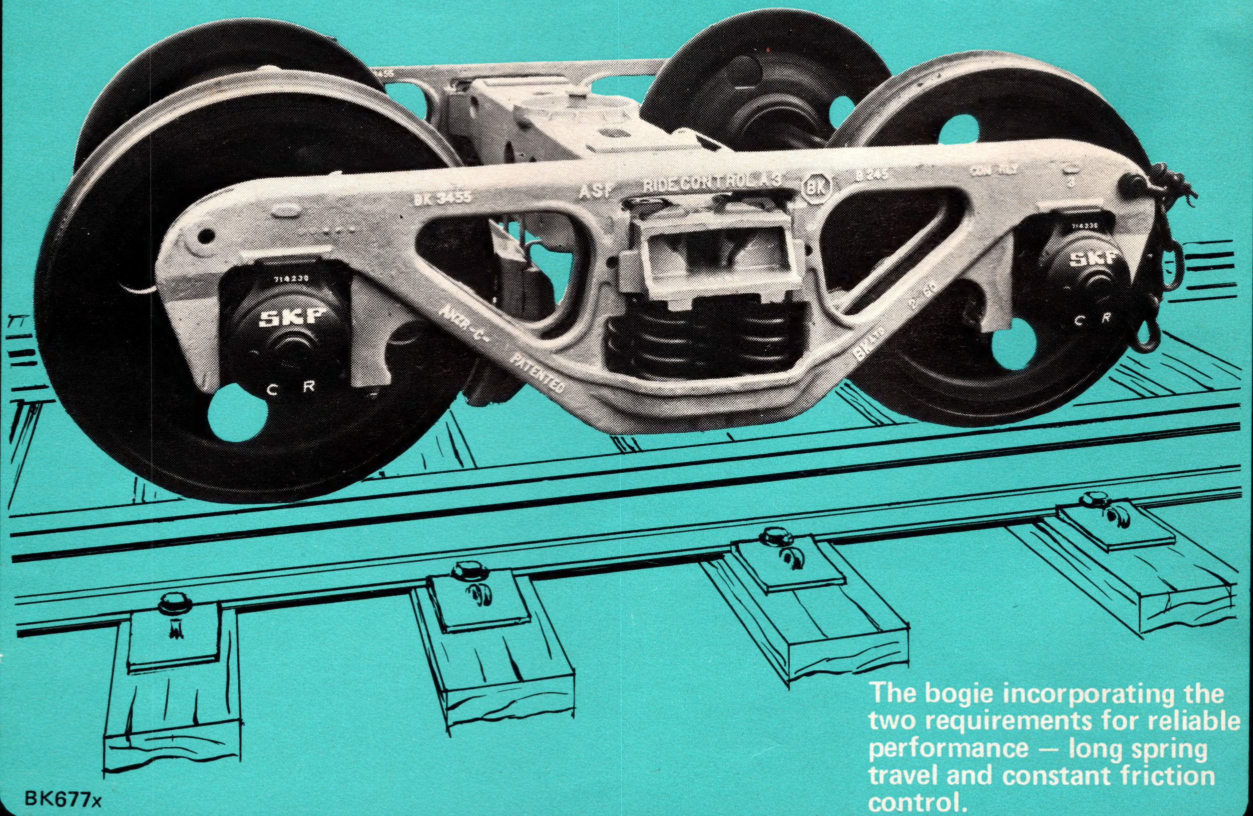

The bogie incorporating the two requirements for reliable performance – long spring travel and constant friction control.

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Railways of Australia

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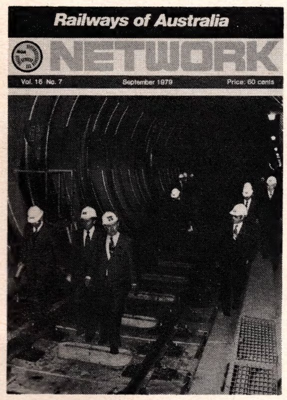

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- Victorian Railways
- Western Australian Government Railways

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OUR COVER

A general inspection tour of the first rails in the Burnley tunnel, one of the four which will go to make up Melbourne's new underground railway system. The Burnley and Caulfield tunnels with Museum Station, one of the three new stations on the line, will come into operation late in 1980. Leading the party are, from left, Mr R. B. Roscoe (Chairman, Melbourne Underground Rail Loop Authority), Mr Frank Wilkes (Leader of the Opposition in the Victorian Parliament), Mr Ian Hodges (General Manager, VicRail), and Mr W. C. S. Ellis (MURLA Board Member).

(Photograph by VicRail photographer Tim Juhasz)

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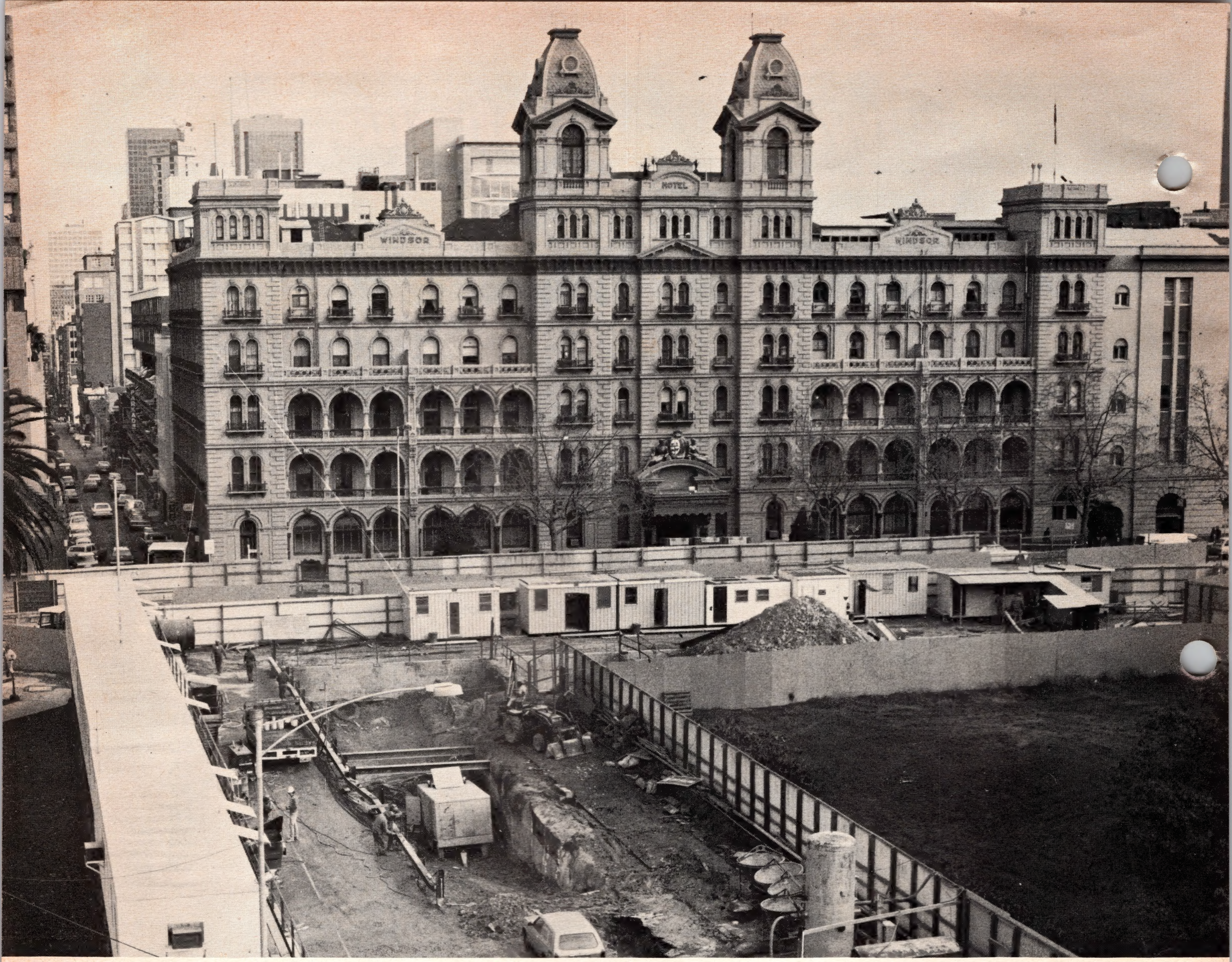
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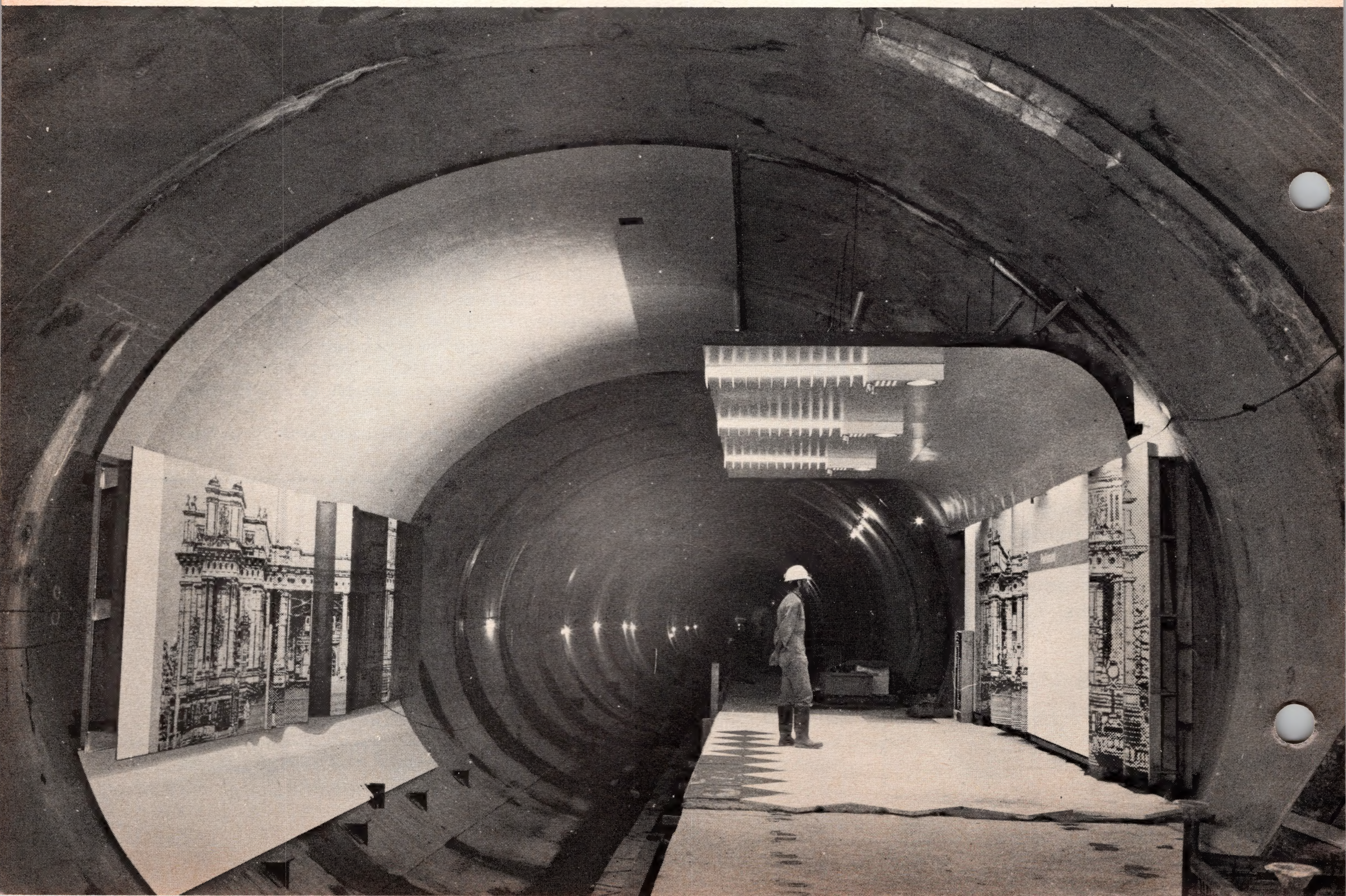


Railways of Australia
NETWORK

From the Executive Director's Desk

Australia and New Zealand — Trans-Tasman Economic Union?

In recent weeks the prospects of various forms of economic union and the lifting of trade barriers between Australia and New Zealand have been canvassed between the two countries' respective Prime Ministers. Although discussions of this nature are not new, at last we seem to have a breakthrough . . . and the ministerial dialogue could prove to be extremely beneficial for both partners.

There can be little doubt that successful merchandising of manufactured products on the world markets demands high volume production for viability . . . the volume made possible by commercial union of the two South Pacific nations.

However economic union is but one facet of the survival crusade.

Marketing of Australia and New Zealand jointly as a holiday destination for overseas visitors is more important now than ever before. The introduction of low international air fares has opened a completely new travel market; we should be eagerly endeavouring to make sure of our share of this expanding sector, and open a new era for Australian tourism.

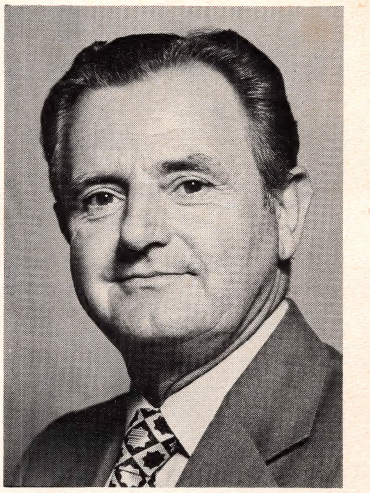
Recognition of the importance of tourism in Australia has been slow in coming. However the recent budget content acknowledged tourism as a major "product" in Australia's economic development. On the international scene tourism is a bigger business than the production of iron or steel or armaments — and there is no sign of tourism being restricted by the current international economic malaise. On the contrary a United Nations report prepared by the Secretary-General, Mr Kurt Waldheim, states tourist receipts totalled no less than $A292 billion last year. This figure was an increase of 15% on the previous year.

Mr Waldheim's report went on to state that a survey indicated only 6% of the people surveyed were willing to forego their annual holidays, although they were prepared to make considerable sacrifices in most other areas affecting their lifestyle.

These are the people who comprise our tourist market. In Australia and New Zealand we offer unique and unforgettable experiences to the traveller . . . experiences which are quite complementary as the terrain differs so greatly on either side of the Tasman Sea.

No other two countries in the world are so alike, stemming as they do from a common heritage. There are no language barriers, no hurdles of currency, no startling differences in lifestyle. Both countries have suffered at the hands of trading partners who have formed their own economic communities to protect their trading interests. These setbacks have further forged the links of friendship between Australia and New Zealand.

How can we more effectively promote Australasia as an international South Pacific destination? Since the formation of the Australian Tourist Commission some years ago Railways of Australia has worked closely with that organization to promote Australian rail travel in overseas markets. Belated recognition of the importance of Australian tourism came from the Federal Treasurer in the Budget, when the appropriation for the Australian Tourist Commission was increased by $4 million, almost doubling the previous years figure. At the same time the introduction of depreciation allowances for hotel/motel accommodation provided further encouragement in a previously neglected sector.



The Railways of Australia tourist pass, the "Austrailpass", has been acclaimed as particularly good value by overseas visitors. Promotional bodies for New Zealand tourism are also vigorously working to increase their share of the tourist market.

As trade barriers topple between Australia and New Zealand, a very real opportunity presents itself for the rapid escalation of our combined tourist traffic. Tourists travelling 15,000 km and more should be persuaded that it is desirable to see Ayer's Rock and Auckland, the Barrier Reef and the Bay of Islands, Sydney Harbour and Milford Sound.

We have a rare opportunity presented to us as a tourist industry. Our customers can travel to Australia . . . or to Australia and New Zealand . . . more economically than ever before. Let us provide these people with pleasurable and unforgettable experiences in travel — and assure our departing visitors of memories of a land and its people which in turn will produce further dividends for Australasian tourism.

I am confident Railways of Australia will play its part, and will be willingly supported by all those who have Australia's tourist industry at heart.

NEVILLE J. GAZZARD
Executive Director

Work on Parliament Station, on Melbourne's underground railway loop, is proceeding both on and below street level. Initial construction work on the southern booking hall is viewed (above) against the background of the Windsor Hotel, in Spring Street. The mock-up (below) shows the type of decoration to be used at platform level.

Readymix Costain prestressed concrete sleepers.

Carrying Australia's rolling stock for generations to come.

Whatever the climate, whether 45 deg. in the shade or below freezing point, prestressed concrete railway sleepers always perform — with high train speeds and heavy axle loads. The expertise of Ready Mixed Concrete Ltd. linked with Costain Australia Ltd. gives Australia the assurance of service and reliability with the sleeper to carry Australia's railway traffic well into the future.

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Travellers enjoy comfortable and quality restaurant service on the Southern Aurora.

VicRail's Trading and Catering Services Branch

Each year VicRail's Trading and Catering Services Branch serves two and a half million meals. It provides food somewhere in Victoria 24 hours every day.

Its service is diverse, extending from train buffet and dining cars to station cafeterias and refreshment stalls, from country refreshment rooms and the Mount Buffalo Chalet to staff canteens. The branch also runs a flower stall at Flinders Street Station, and conducts bookstalls for the sale of newspapers, magazines, novels and tobacconist goods.

Some 517 people make up the staff and most of these are women. The cooking staff includes three chefs, one each at Mount Buffalo Chalet, Spencer Street Cafeteria and Flinders Street Cafeteria, and 32 cooks.

Each year VicRail provides 9,600 kg of sausages, 39,000 kg of beef, 38,000 kg of butter, 269,000 dim sims — and so on. It is all good quality food at a cost which compares favourably with commercial food outlets, says the Branch head, Ken Feltscheer. Some food, such as bread, milk, meat, smallgoods, meat pies and pasties, is bought under tender. Groceries come from the VicRail central store.

"We cater for the average person's taste", Mr Feltscheer says, adding that overseas members of the community are generally happy with the conventional food dishes, still the choice of a majority of "home-grown" Australians.

Traditional preferences remain strong according to a recent survey. Bacon and eggs lead the field to the extent that there is no race; but the traditional winner, the meat pie, has fallen in favour. And the Branch will change menus in response to public request.

* * *

A set breakfast menu is provided on the Southern Aurora, but dinner menus in the dining-car follow a sequence of four and provide the equivalent of good-class restaurants in the private sector. The Spirit of Progress and the Intercapital Daylight between Melbourne and Sydney feature a more restricted meal service; but they also provide a wide range of light refreshment items. The Vinelander and the Overland offer a choice of light refreshments and beverages.

On the Southern Aurora you can choose from such familiar dishes as roast turkey and ham, leg of lamb and mint sauce, fillet mignon and mushroom sauce, and lemon pancakes. The menu is broad, ranging from appetisers and soups, to cheeses with tea or coffee. A substantial meal can be accompanied by wine or spirits followed by a liqueur from a comprehensive list which includes half bottles of wine for the person dining alone.

Special Officer, Otto Richter, says the Southern Aurora dining car service compares favourably with any in Europe. "It has more extensive menus than in Europe, because it has an a la carte menu".

All meals are cooked on the train. The South Dynon Depot supervisor and depot cook for the Southern Aurora, Paul Fallon, 29, prepares the meats and sauces during the day, while grills and vegetables are cooked on the train as are

Melbourne's Spencer Street cafeteria provides attractive surroundings for both the public and railway employees.

The pace is hectic during the lunch period at the Spencer Street cafeteria.

the breakfast dishes. Paul usually caters for 70-80 people; then more is prepared in the afternoon if needed. "We would have enough stores of steak and fish in our freezer and fridges if everyone on the train wanted a meal. We cook up to 170 breakfasts."

"Passengers using the Southern Aurora dining-room greatly appreciate the white linen with silver cutlery and the friendly manner of the staff." And Paul points out that the service extends to non-passengers. "People can dine with friends they are seeing off at the train and still have time to see a show afterwards if they wish. They can start their meal at 7.00 p.m. and leave by 7.55 p.m."

* * *

In providing catering services to the travelling public, a waiter in the Southern Aurora dining-car from Melbourne to Albury travels 63,549 km a year. A buffet car catering assistant travels 114,242 km annually on the Spirit of Progress, 48,530 km on the Overland and 43,976 km on the Vinelander from Melbourne to St. Arnaud (where the staff changes).

The attendants provide almost 154,000 services a year on the Spirit of Progress, 150,000 on the Intercapital Daylight, and 109,000 on the Vinelander. These services include 57,000 small cans of ale and soft drinks on the Spirit of Progress, 97,000 small cans of ale and soft drinks and 175,030 slices of bread on the Vinelander, 39,000 small cans of ale and soft drinks, 68,640 slices of bread and 3,588 litres of milk on the Intercapital Daylight, 87,000 small cans of ale and soft drinks, 2,000 dozen bread rolls and 17,550 litres of milk on the Southern Aurora.

The Branch also operates dining-car and/or buffet-car services on country race trains, school educational tours (which usually last five days and number 40 a year), dinner-dance trains and Sunday package tours. It also caters for the State Car for tours by His Excellency the Governor, and the "Norman" car (the first club car used on the original Spirit of Progress) which is used for country tours by State Cabinet, the VicRail chairman and the general manager.

At Mount Buffalo Chalet, the food is also largely traditional. Shortly before Christmas 1978, service improved further with the introduction of a "B.Y.O." licence, although one had operated on Saturdays before then. The Chalet's patronage has increased by 37% during the past four years, a sure indication that its services are excellent.

* * *

Spencer Street Cafeteria is the Branch's main catering centre, where Area Manager, Ian Speight, administers some 185 staff who also provide cooked food for the Intercapital Daylight Express, the Spirit of Progress, special trains such as race trains and school trains, and carton or packet meals for rail parties.

Functions such as luncheons for the Melbourne Underground Rail Loop Authority and other similar bodies are also catered for by the cafeteria. It catered for as many as 10,000 in one day during the Scout Jamboree in 1962.

Mr Speight says the daily menu is drawn from some 300 items which are adjusted daily. "We bake most of our food except bread and cakes, which we do not prepare ourselves because of lack of time." The cafeteria closes on Sundays but travellers can buy snacks at the refreshment stalls at Spencer Street station.

The chief storeman and his assistant check some of the massive number of articles held in the central storehouse.

VicRail's central store, which opened in 1919, supplies all of Victoria. Its 19 staff members distribute groceries, liquor, confectionery, soft drinks, cigarettes and equipment such as cutlery, crockery, glassware, pots, pans and furniture. The store, situated in Flinders Street, makes total purchases of $2 million a year. About one quarter of its purchases are made on tender and the rest by agreement, says Provedore, Mr Ken McGarry. "Our biggest bulk orders include milk, bread and soft drinks. Cigarettes make up the highest value of our purchases."

* * *

Twelve hundred railway personnel use the South Dynon canteen, which is open from 7.30 a.m. to 9.30 p.m. Five kg of frankfurters, 20 dozen dim sims, and ten dozen pies are among the items sold daily.

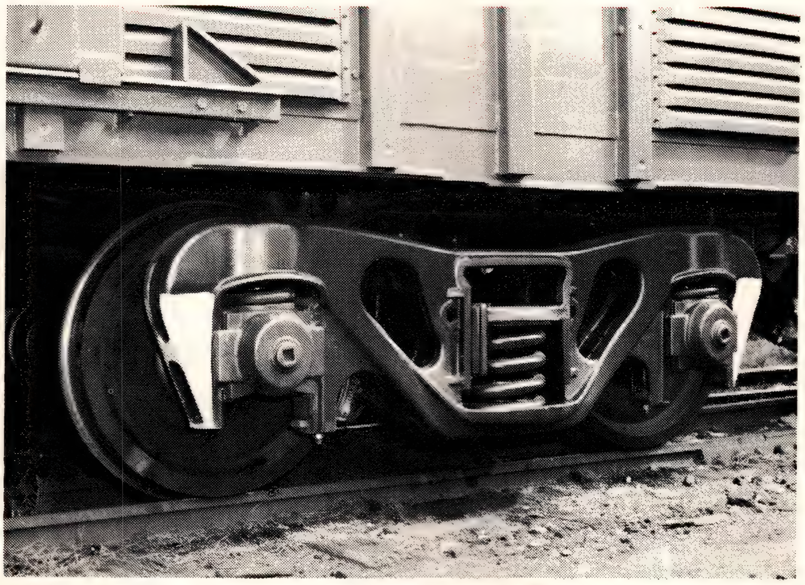
The automatic drink and confectionery vending machines have been a highly successful venture. They were installed at Spencer Street, Princes Bridge and Flinders Street stations three and a half years ago. In 1978 they dispensed 1,782,000 drinks and 325,000 items of confectionery.

"Sales are very pleasing," says Mr Feltscheer. "With the machines and with all our work, the overriding consideration is the provision of good service for railway patrons."

The Branch provides and launders 114,000 dozen articles a year, ranging from sleeping-car linen to barbers' towels. Twenty people work at the VicRail laundry at Dudley Street, West Melbourne.

The new staff cafeteria at Spencer Street features the latest in design for efficiency and an attractive environment.

SPRINGS FOR RAILWAY ROLLING STOCK.



Fast freight bogie with Pioneer Springs and Wear Plates as supplied to the New South Wales Public Transport Commission.

Pioneer supplies springs and wear plates for the fast freight bogies and locomotive suspension units that are used to transport goods and passengers over mainline tracks at speeds up to 125 km/hr. Pioneer's reputation for reliability has spread all over the world. Transport engineers everywhere rely on the consistent high quality of Pioneer springs for suspension units.

PIONEER SPRING COMPANY

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The Southern Aurora, Sydney-Melbourne Express, fitted with springs supplied by Pioneer.

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Railways of Australia
Vehicle/Track Studies
Programmes and Progress

In the last two decades there has been a renewed interest in railway transportation, due largely to a demand for mass haulage, particularly of minerals, and a need for a reduction in energy consumption. This renewed interest in turn has led to the recognition by railway authorities of the need for longer-term research activities aimed at improved vehicle/track standards, passenger transport, reliability and minimum optimum maintenance costs.

For over a hundred years following its development in the middle of the nineteenth century, the railway was able to offer both technical and economic superiority over other modes of transportation and therefore enjoy a protected and singular position. However, in more recent years, the situation has changed considerably due to aggressive competition from road and air transport systems. The general reaction by railway authorities throughout the world to this competition has been to use larger vehicles, higher axle loads, longer trains and faster speeds. Since this trend was not accompanied by an equivalent rate of technical advancement, it necessarily led to higher and higher maintenance costs of both vehicles and track.

Study Co-ordinating Committee inspecting Dubbo test site, 11 July 1979.

General view of Dubbo test site, with test train approaching.

In 1977 the Australian Bureau of Transport Economics (BTE) suggested that an integrated track research study be initiated in Western Australia, thereby taking advantage of the pending Kwinana-Koolyanobbing rehabilitation programme. This proposal was approved in principle by the Commissioners of the Australian railway systems. Soon after, at a meeting of civil and mechanical officers from the various systems, it was unanimously decided that the track studies proposed by the BTE should be integrated with various vehicle studies proposed to be carried out by New South Wales in a research programme to be known as the Railways of Australia (ROA) Vehicle/Track Studies and that all ROA systems would participate. In August 1978, approval was given by the Commissioners to proceed with the research programme.

* * *

The ROA Vehicle/Track Studies are being conducted in two main arenas — the Public Transport Commission of New South Wales and Westrail.

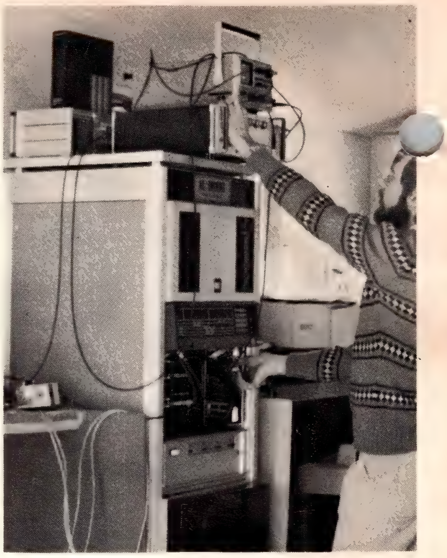
The primary objectives of the N.S.W. programme are:

(a) to determine the dynamic loads that are imposed on the track by the interaction of representative Australian vehicles used in inter-system traffic with representative track geometry features at various speeds, in both tangent and curved track and for both loaded and unloaded wagons; and

(b) to determine the behaviour of the vehicles under the conditions mentioned above.

The results obtained will allow improvements to be made to vehicle design characteristics and will be used to determine safe and cost optimum operational speeds of freight vehicles based on the degree of deterioration caused to both vehicles and track.

Test train passing through main test site at high speed.



Data Acquisition System computer, instrumentation shed, Dubbo.

Test train stationary over instrumented track.

On the other hand the primary objectives of the Westrail programme are:

(a) to quantify the relationship between induced track forces and track degradation as a function of time and amount of traffic; and

(b) to determine the influence of several different track structure forms and track component types on capital and track maintenance costs.

With this data it will be possible to determine the design structure required to obtain an optimal cost railway track.

The two studies are linked by the measurement of track geometry and track forces. For example; since, as explained below, the Westrail study is being conducted under actual track conditions, the influence on track degradation of only a small number of vehicle types can be determined.

Data obtained from the N.S.W. study will be used to determine the influence, in terms of track loadings, of a much broader spectrum of vehicle types and operating conditions.

* * *

The N.S.W. programme began in November 1977 and by May 1979 the Project Team had developed and tested suitable experimental techniques necessary for the measurement of track forces. Proving trials for such techniques were conducted over a period of time at Beresfield and at Mt Colah. From these initial tests it became apparent that in order to achieve the very rigorous time schedule that had been set, a track site would be required that would allow sufficient track occupancy time and that would exhibit the numerous technical characteristics necessary.

The main test site for the N.S.W. programme was chosen near Dubbo, between the 445 and 448 km locations on the Sydney to Dubbo line. By July 1979 all necessary track upgrading and detailed track instrumentation of the various test sections had been completed. With such instrumentation it will be possible to determine the actual loads that are applied to the track, both vertically and laterally, by the various vehicles. The test programme at Dubbo is scheduled to continue on a full-time basis until June 1980.

* * *

The Westrail Track Studies are of a very much longer term, having a time schedule of ten years. This time is necessary to determine the influence of the various structural parameters on track maintenance costs. The main structural variables that will be studied are: ballast depth, ballast type, sleeper type, sleeper spacing, rail type and fastening assemblies. The experiments will be conducted over a series of 1 km test sections that will be constructed, beginning in August 1979, between Meckering and Tammin on the Kwinana to Koolyanobbing standard-gauge line. The test sections will therefore be subjected to normal operating traffic.

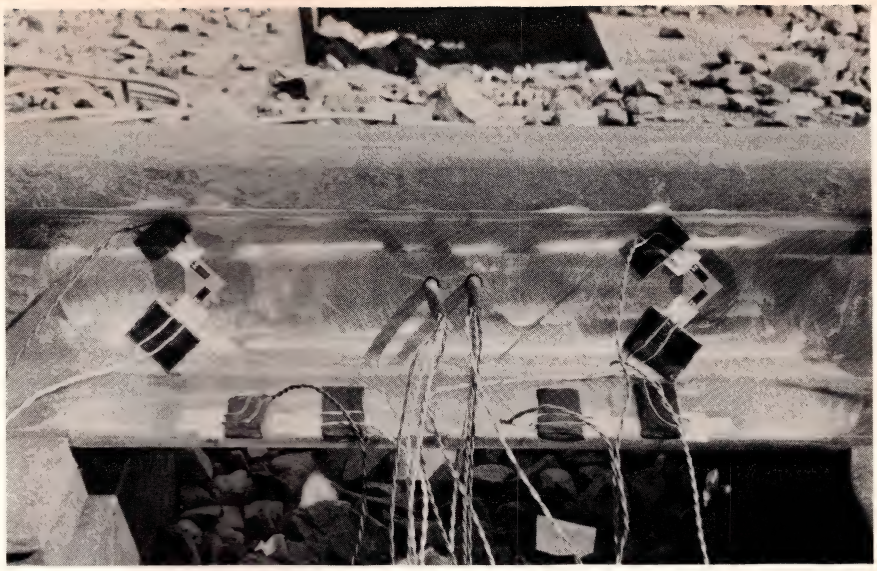
Each of the test sections will undergo considerable instrumentation so that the data obtained will be of a quantitative nature to allow a detailed analysis of observed differences in track degradation, track geometry retention and therefore track maintenance costs. A track recorder car fitted with computer analysing facilities will be used to closely monitor any changes in track geometry and as a base for maintenance cycles.

The data obtained from the N.S.W. and Westrail studies will also be used as an input for validation purposes, to vehicle and track design analytical models that are currently being developed in Australia. The development of such models is regarded as an integral part of the Railways of Australia research programme. Following validation, the models can then be used in the design of future vehicles and tracks to optimise both safety and costs.

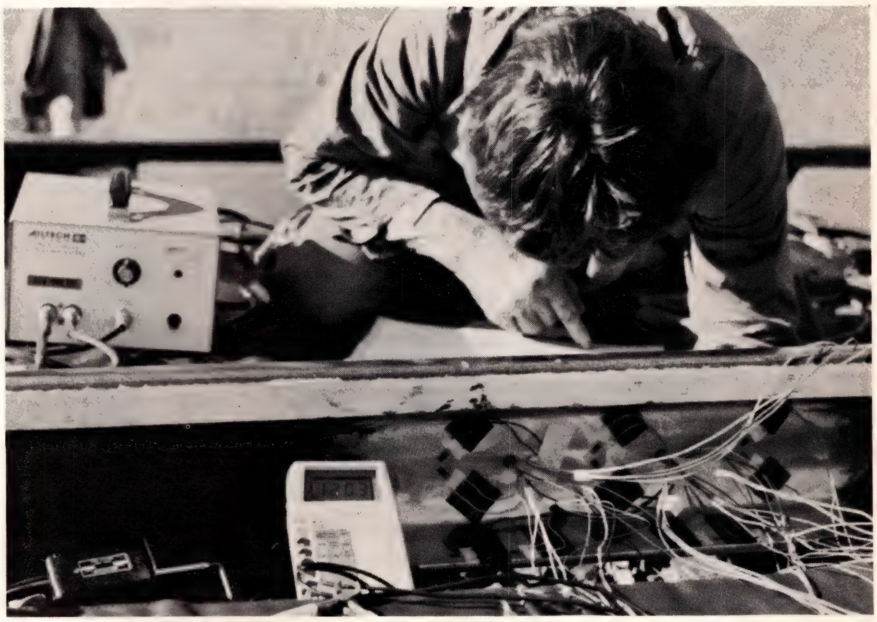
* * *

Although the actual detailed test programmes have only just begun, benefits are already being obtained by the interaction of civil and mechanical engineers and by the interaction of personnel representing the various Australian Railway Authorities. As such, it can be said that no other research programme has hitherto been approached in this way by the railway systems of Australia.

Realistic objectives and work programmes have been formulated. The achievement of these objectives will not only result in short-term benefits, such as determining safe and cost optimum operational vehicle speeds, but in the long term will enhance the technical and economic superiority of the railway system over other modes of transportation.

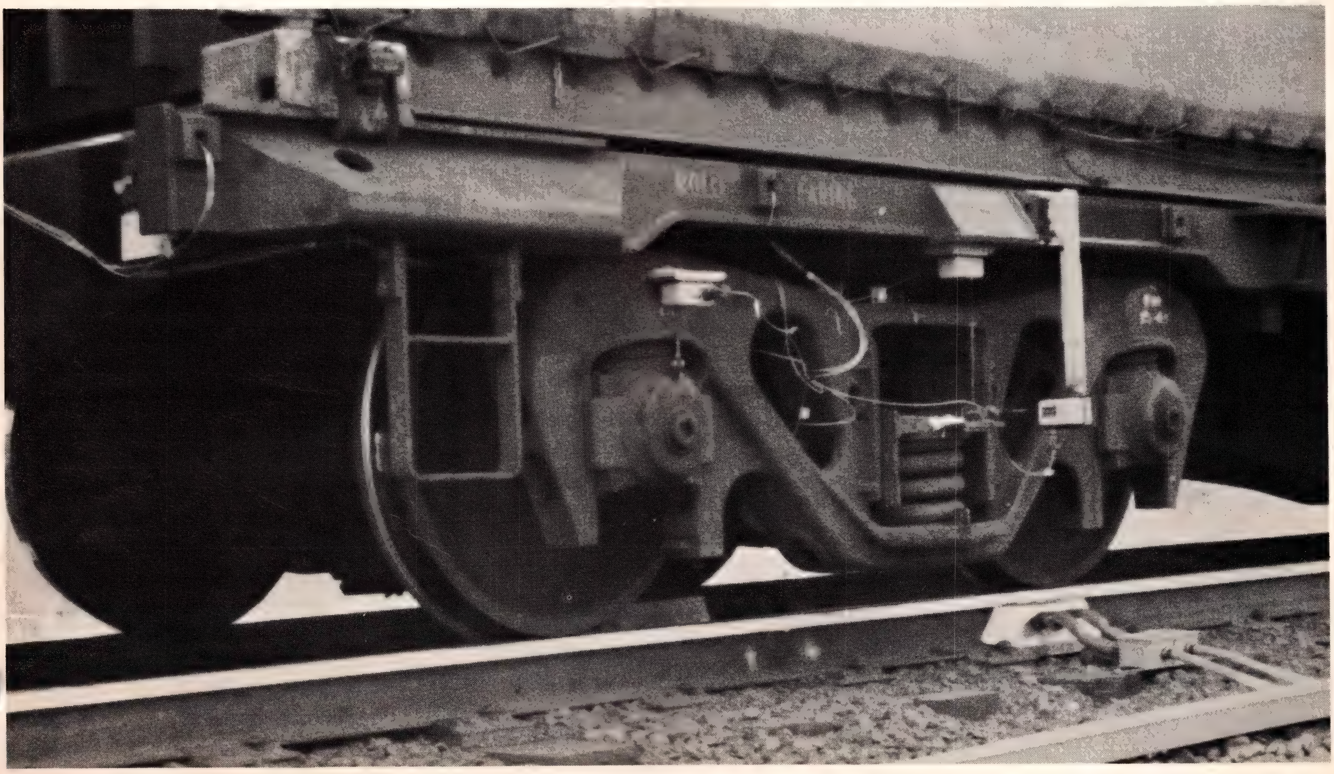


Strain gauge locations — vertical gauges on web, lateral gauges on foot.



Wiring of strain gauges to junction boxes.

2CM bogie being tested at main test site.



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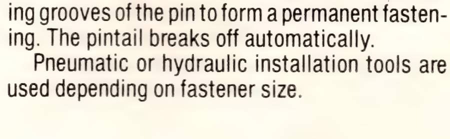

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Apprenticeship Week - VicRail Manager Addresses Rotary

VicRail General Manager, Mr Ian Hodges, a former railway apprentice, addressing the Rotary Club of Melbourne at the start of Apprenticeship Week, said that in Australia today ever-growing pressures are forcing change and improvements in the training of artisans and that it will be necessary to modify apprenticeship practices and procedures further.

"VicRail was the first and is still one of the few industrial organisations which sponsor and pay for their own apprentice training college," said Mr Hodges.

"Although we have had this college for many years it is in fact completely staffed by seconded instructors from the Education Department. Thus we have ensured that the standard of training is in line with other educational establishments."

He pointed out that with the continual review of training objectives, apprentices are not only being better trained but also are more productive earlier in their indentured term.

"Indeed, it appears that most young men and women can reach the required educational standard in somewhere between 2-2½ years rather than 3-4 years which was the general position some 25 years ago.

"I also believe that the manual training centre experience could well be extended with some modification in the process to approximately the same time as the theoretical training.

"After a period of, say, another twelve months of shop floor activity his knowledge and experience should be sufficient to enable him to qualify as a basically-skilled tradesman.

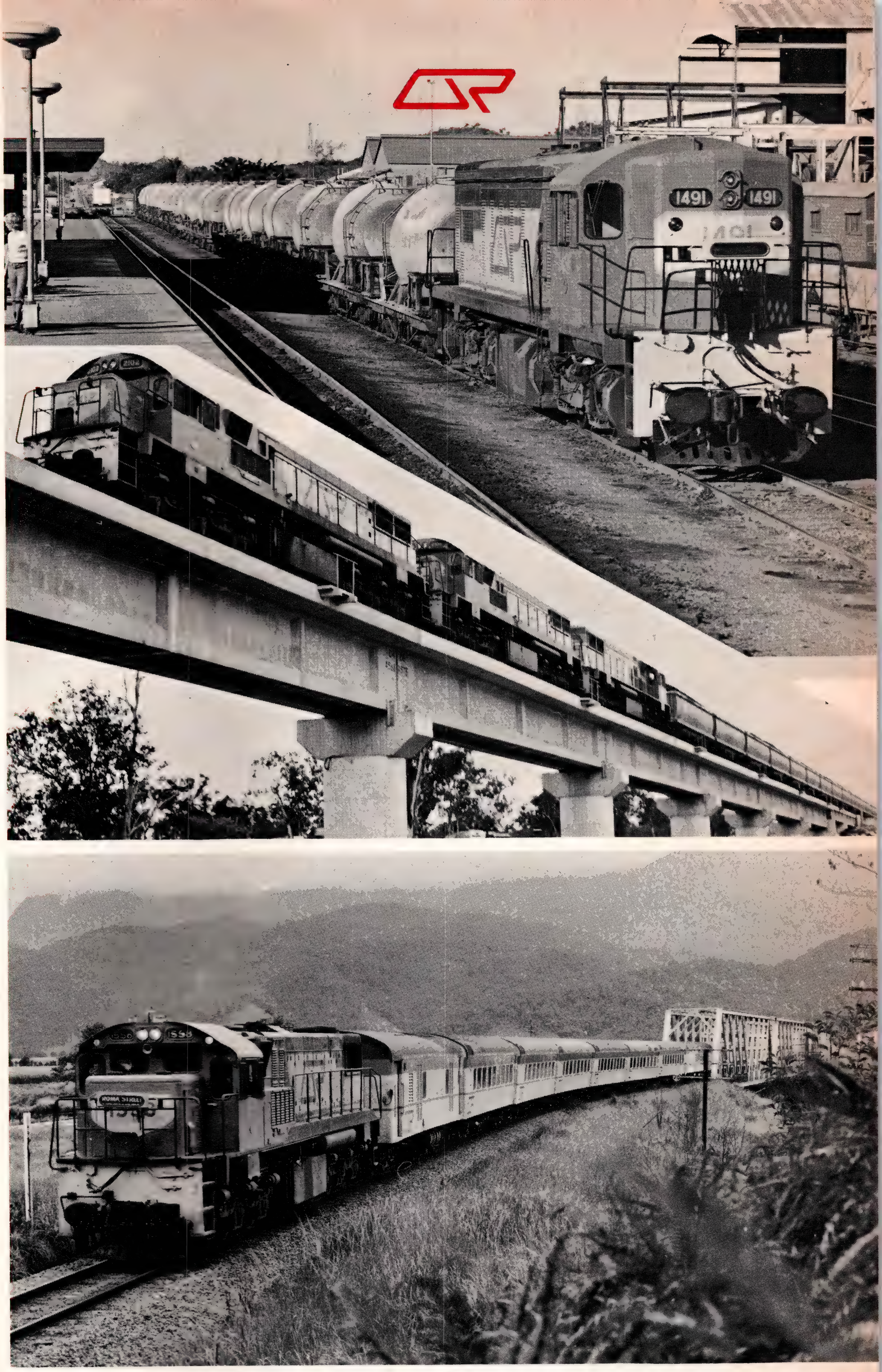
"This would mean that a young man could train to be a tradesman in something in the order of three years maximum as against the current basic term of four years."

Mr Hodges pointed out, moreover, that both management and unions had a vested interest in apprenticeship training.

Management felt it was entitled to bond apprentices for a period after they become skilled as recompense for the outlay in their training.

Unions were reluctant to open the gates too wide for the recruitment and supply of tradesmen. By limiting the number of entrants to a trade, the unions increased their bargaining power.

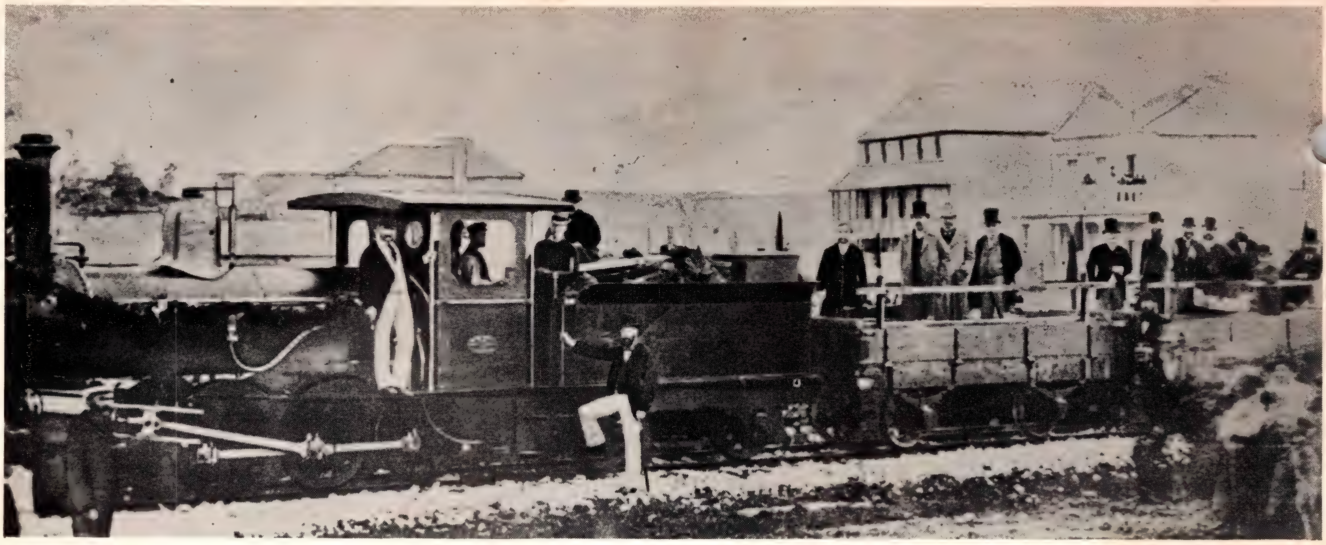
"Both views are equally unacceptable," said Mr Hodges. "If this country is to progress it is absolutely vital that we produce an increase in the supply of skilled labour as soon as possible and neither the individual organisation's desire to retain indentured labour nor the unions' desire to retain their position of power in the bargaining area should be allowed to prevent the training of additional skilled people for industry."



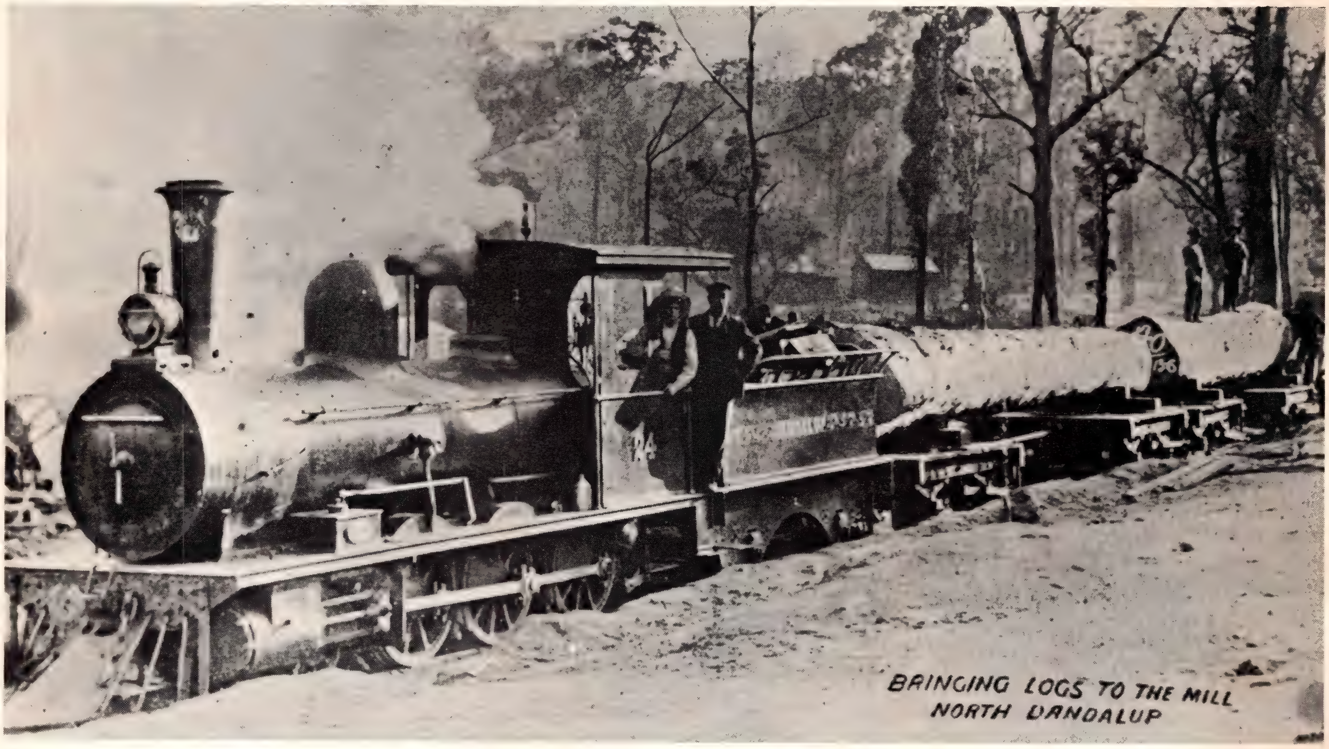
Bulk cement wagons passing through Cairns (top).

Coal from Goonyella heading for Hay Point (centre).

"The Sunlander" in North Queensland (below).



Opening of the Fremantle-Perth line on 18 March 1881



One of the first two W.A.G.R. locomotives, sold for the North Dandalup timber line in 1909.

The Old Way

Guests listen to the address by the Premier, Sir Charles Court, at the ceremony commemorating one hundred years of Government rail transport in WA.

The Westrail Centenary Commemoration

Westrail celebrated its centenary on 26 July 1979 and Geraldton was the venue for celebrations to commemorate the occasion.

The initial line ran for 53 km from Geraldton to Northampton, 480 km north of Perth, to cater for the district's lead and copper mining industry; and to commemorate the actual date, the Geraldton Westrail Centenary Committee buried a time capsule, containing amongst other things, staff information and copies of centenary publications, in the forecourt of the present railway station. The ceremony was performed by the oldest known retired railwayman in Geraldton, Mr Bert Lock. The capsule is to be opened in 2029.

Vintage steam train "Leschenault Lady", a "G"-class locomotive built in 1897, was taken the 670 km from Bunbury to Geraldton to participate in the celebrations and to provide a series of local excursions for Geraldton people and school groups.

On Saturday, 28 July, a plaque was officially unveiled by the Premier of Western Australia, Sir Charles Court, K.C.M.G., O.B.E., M.L.A., at the original railway station building in Marine Terrace. This has now been refurbished as part of a museum complex. During the function, and for later public display, the museum housed an exhibition showing the growth of railways over the past hundred years.

* * *

In an address at the unveiling ceremony the Commissioner of Railways, Mr W. I. McCullough, paid tribute to the untiring efforts made by railway men and women during a century of development.

"There are many stories of hardships which were endured in the old days, but this tended to form a strong bond between railway staff and their families — many of whom can record three generations and more of sterling service.

"We have now grown from a lusty infant to a fully-grown transport organisation and the old ways had to be left behind to ensure that our lead as the State's major transport organisation was maintained, a position we have jealously guarded for the past hundred years.

"Development gathered steam with the advent of mineral discoveries and agricultural expansion in the young colony. Today these industries play just as an important role in our future as they have in the past."

Mr McCullough said he wanted to remind everybody that Westrail could not have achieved its current efficiency without taking advantage of new technology and adapting to the changing condition of its environment and the needs of its customers.

* * *

Part of Westrail's display at the old station.

In his official oration the Premier, Sir Charles Court, said that the railways had seen many changes since their first introduction into Britain and later Western Australia. "Many of our great mining ventures would never have got off the ground without the full backing of a substantial railway system, while dreams of moving multi-million tonne grain harvests would have remained dreams," he added.

"Technological change was inevitable. We saw the progress from steam — with wood and coal as a fuel — to diesel power and there has been a steady advance in the type of rolling stock and an increasing trend towards bulk and containerised transport.

"Speeds, the size of trains and the tonnages carried have changed dramatically — as has the means of communication for traffic control.

"At the same time, the attitude of the community towards rail passenger transport — both for short and long distances — has changed tremendously with the advent of the motor car and the aeroplane.

"But one thing comes through clearer than ever and that is the fact that ever-increasing tonnages will be carried by rail," the Premier remarked.

Sir Charles said that there were types of freight and haulage distances where rail was unbeatable if it kept abreast of the challenges of the times but realised that it did not have the freight business as of right in any particular field. "It has to win that business and be ready to adapt to change.

"No matter how severe the energy situation might become in terms of liquid fuel, I can never see us reverting to coal-burning steam trains unless there is some dramatic technical breakthrough compared with the days when the steam engine was supreme.

"However, I can see an ever-increasing move towards electrification. Liquid fuels do not dominate the source of energy where electrification is concerned," he said.

Because of this the Minister for Transport and his advisers had been instructed by the Government to step up their research into electrification and to determine as quickly as practicable the break-even points at which electrification would become economically viable on various sectors of the system.

"Coincidental with this type of study we have to realise that as liquid fuels become more costly and less available for road-haulage vehicles so there will have to be a further rationalisation and co-ordination of freight on to rail.

"Our current studies to make the railways more competitive and at the same time achieve the optimum effective use of all transport systems are being undertaken with care. We have no intention of going overboard to some concepts which in theory might appear the answer but in practice might be a disaster.

"Railway men can be assured that the Government has a positive attitude towards the future of railways. We look on them not only as an expanding business but as a system that we cannot ignore in its role in the total transport system.

"It is a service industry that must gear itself to win patronage and not

"Leschenault Lady" takes VIP guests from Geraldton to Narngulu.

assume that business will be directed to it by regulation."

Sir Charles said the Government acknowledged the role that railways have played in the opening up of the State, whether it be in the government system in the South or the private enterprise system in the North West.

"We go forward on the basis that the greatest days of the railways are yet to come," the Premier added.

* * *

Sir Charles also pointed out that some $97.6 million of capital funds had been spent in the past five years on improvements to the Government railway system alone throughout the State. Among the projects undertaken in recent years or under construction were:

- The 80-kilometre Eneabba-Dongara Railway for the transport of mineral sands, built at a cost of $9.2 million and opened in 1975.
- The upgrading of the 259-kilometre Kalgoorlie-Leonora Railway for the Agnew nickel traffic, due to be completed next year, at a cost of $5.8 million.
- The 41-kilometre Brunswick-Collie line upgraded and re-railed at a cost of $4.7 million to handle increased coal traffic.
- To cater for alumina haulage, the 91-kilometre Pinjarra-Picton track was upgraded and the signalling system improved at a cost of some $2 million.
- The $700,000 dual gauge connection between Kenwick Junction and the Canning Vale industrial area constructed last year.
- The $92 million five-year project of re-railing and re-sleepering the 503-kilometre standard gauge link between Kwinana and Koolyanobbing began in May this year.
- Rail recovered from the Kwinana-Koolyanobbing project to be used to upgrade other sections of Westrail's track network as and when required.
- Some $1.2 million spent in the past three years on track maintenance on the Amery-Kalannie line.

"These projects give some idea of the extent and scale of work being undertaken," Sir Charles added. "So much for those who suggest that the Government is allowing Western Australia's railway system to run down. The facts speak for themselves."

* * *

Following the official ceremony and inspection of the museum display, guests were taken on a short steam trip aboard "Leschenault Lady" to Narngulu, a few kilometres from Geraldton.

This was followed by a civic reception hosted by the Town of Geraldton and then by Westrail's official Centennial Dinner. During the dinner Westrail's new promotional/historical film, "The Westrail Story," was screened.

Westrail

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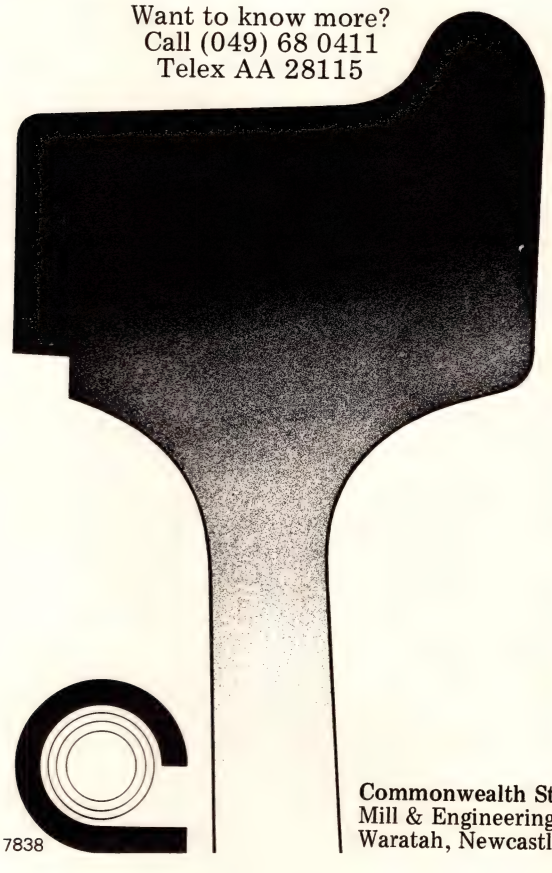

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Institution of Railway Signal Engineers Conference in Perth

Westrail was host to thirty-one interstate members of the Institution of Railway Signal Engineers who visited Western Australia recently for a conference and a ten-day tour of inspection.

The Institution makes three technical visits annually in the three Eastern States. This was the first time that members had visited Western Australia.

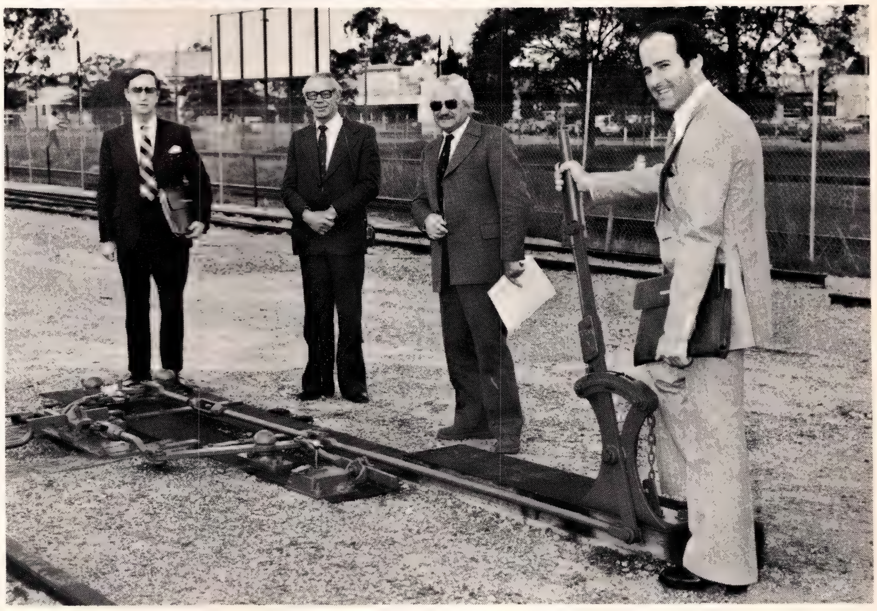
Comprehensive tours were organised for the group, embracing Forrestfield, Guildford Engineering Training School, Midland Signalling, the newly-installed Stores Branch computer supply system, and the communication centre at Westrail Centre. A special demonstration was also given of the micro-processor control system for the CTC on the Picton/Coolup section of rail line in the South West.

Seven technical papers were presented covering various aspects of railway signalling and communication: Pulse Code Modulation Systems for Telephone Trunk Routes; Forrestfield Hump Yard; Forrestfield Hump Yard-Communications; Micro-processor Developments on Westrail; Communication Aspects of Westrail's Material Supply System; Signalling Aspects, and Communication Aspects, of the Kwinana-Koolyanobbing Rehabilitation Project.

Institution members also flew to the North West, at the invitation of Mt Newman Mining Co Pty Ltd and Hamersley Iron Pty Ltd, to inspect their respective railway systems at Port Hedland and Dampier.

Top (left to right): Jim Cox (Chairman, Australian Section, IRSE) and Alan McKenna (Secretary) — both of VicRail — discuss aspects of Westrail's Engineering Training School at Guildford with Signal & Communication Engineers, Bill Adamson of Westrail, and Dudley Both of ANR.

Centre (Left to right): George Shea, Project Engineer — Westrail, watches Terry Chapman and Don Weerakody of Westinghouse Brake & Signal Co., Melbourne, try pulling at a signal at the Guildford Training School.



Below (Left to right): Bill Dawkins, Co-ordinating Engineer of Westrail and W.A. committeeman of IRSE, shows a signalling complex at the Guildford School to Norm Cook, Manager-Signalling of PTC, Ted McCamley of PTC, and Brian Luber of Siemens, Melbourne.

Dalgety

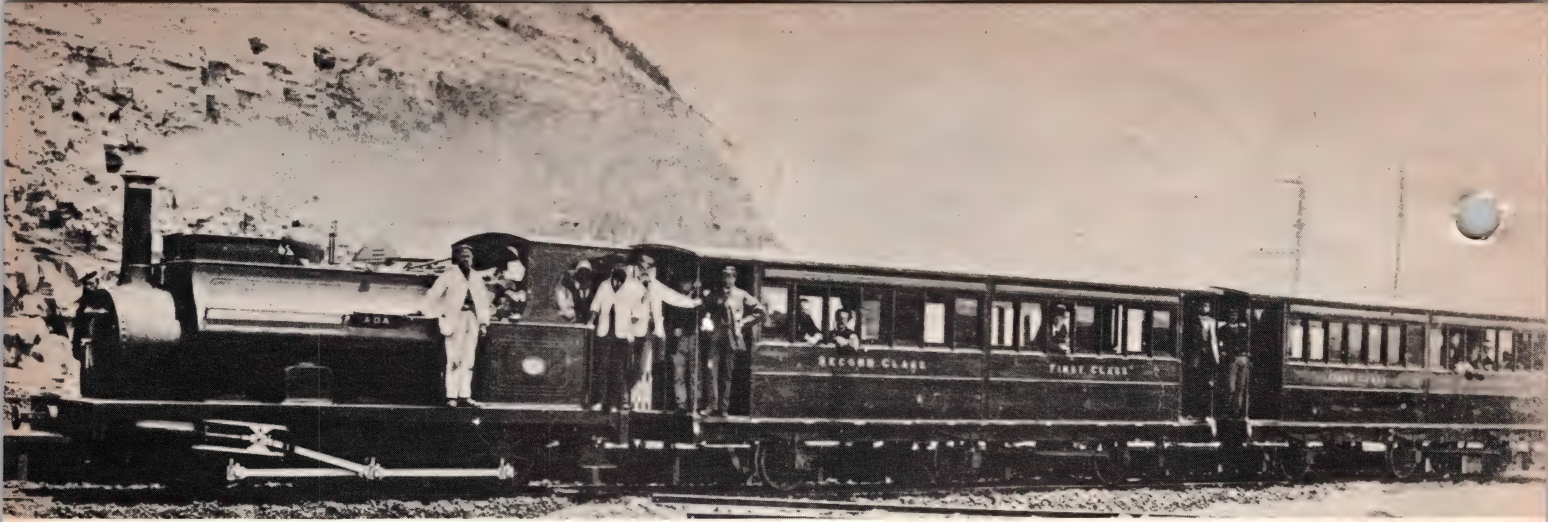
New Zealand Railways

Opposite:
The Auckland-Wellington Express, hauled by an "X" class 4-8-2 locomotive, climbing above Raurimu Station in 1909 (above).

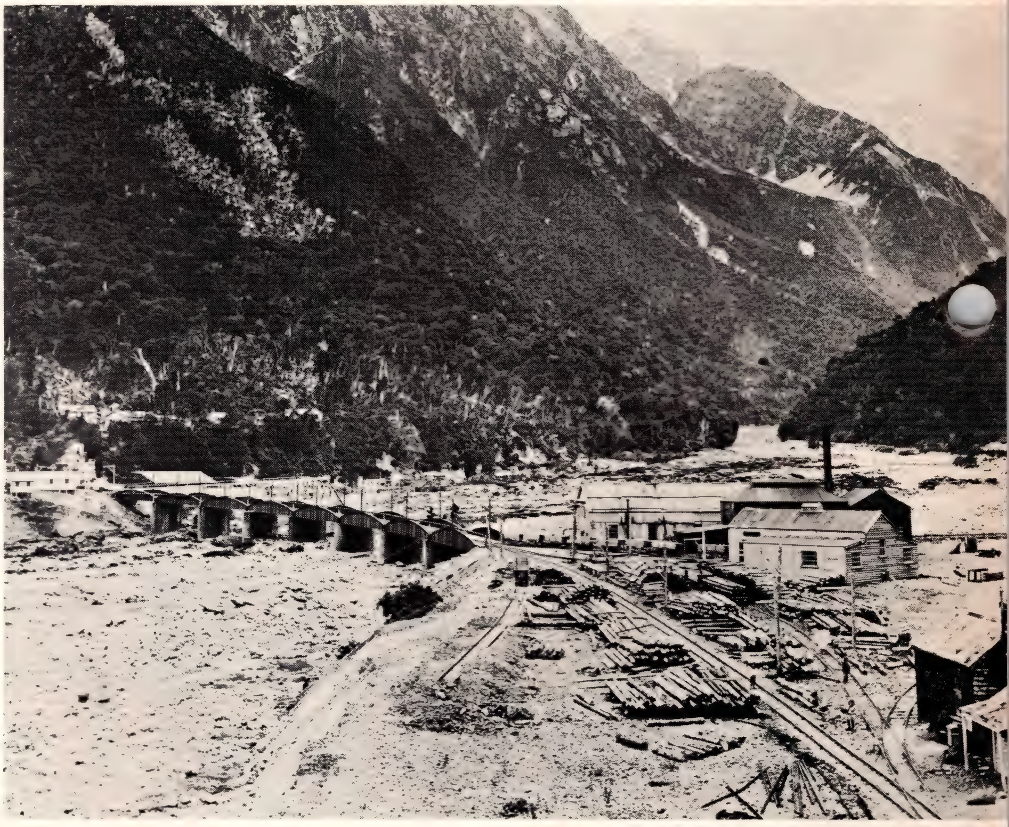
Wellington goods yard in 1968 (below).

Right:
The Silver Star Express runs between Auckland and Wellington, six nights a week. It is hauled by a 2,050 kW "Dx" class Co-Co diesel-electric locomotive.

Below:
Wellington goods yard with modern wagons and containers.

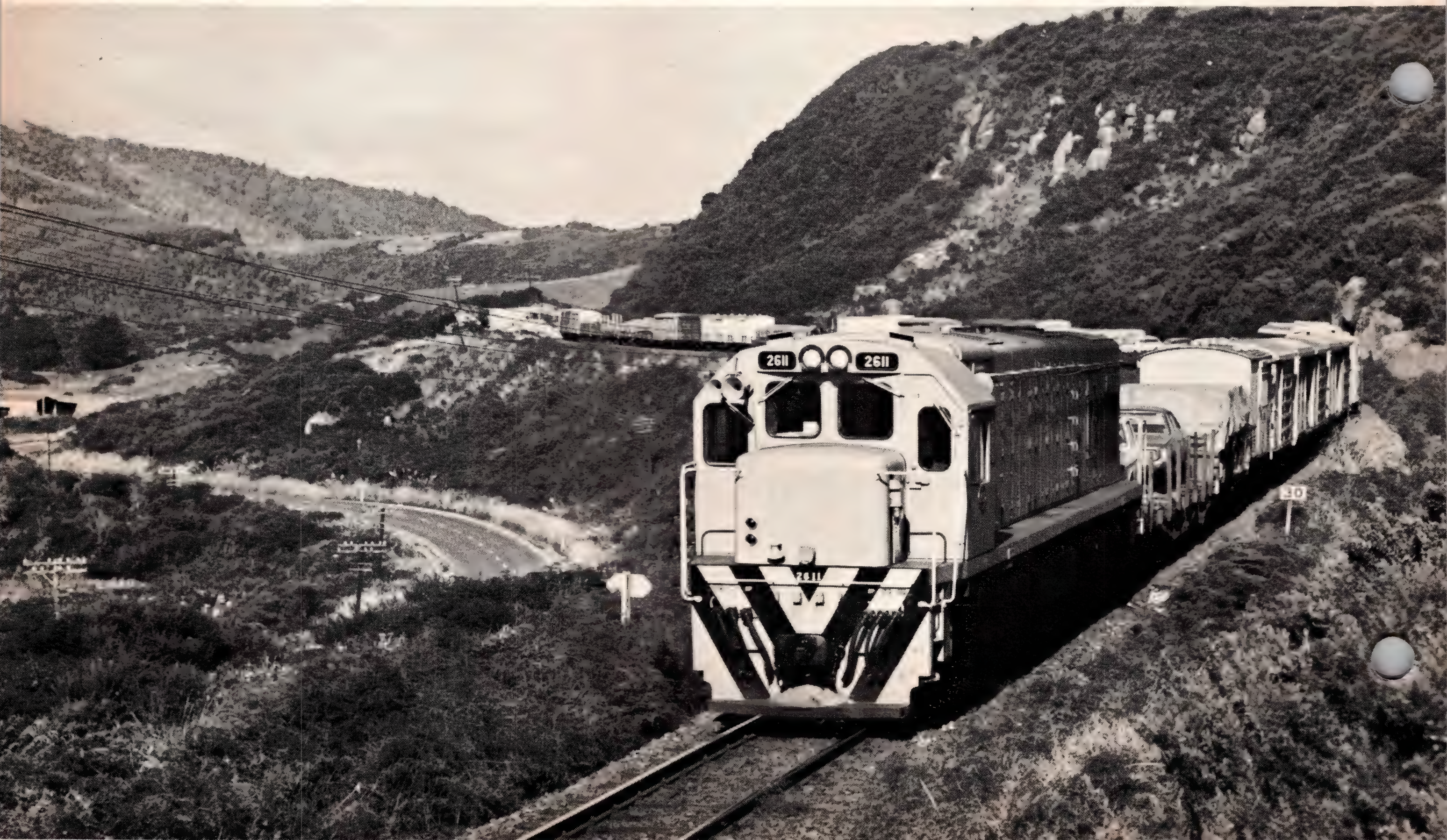


Above:
The first train from Auckland to Onehunga ran on 24 December 1873.



Right:
The western portal of Otira tunnel, during construction, in 1923.

Below:
A Wellington-Auckland freight train, hauled by a 2,050 kW "Dx" class diesel-electric locomotive, between Waiteti and Te Kuiti.



CP Rail Lasers Assess Bogie Performance

CP Rail is using laser technology to gather test data on "new generation" bogie designs; and an important part of the research is the curving performance test.

"Ever since man put a wheel on a track", says Alan Bethune, Director, Technical and Operations Research, "We've faced the problem of wheelsets accommodating the difference between the length of the outer rail and the inner rail on a curve.

"Ideally, wheelsets should align themselves radially — that is, stay at right angles — to the curve all the way through the turn. Sometimes they don't, and the misalignment is known as the angle of attack. It's a difficult angle to measure accurately."

The method developed by CP Ltd research engineers, in collaboration with the National Research Council of Canada, utilizes three small-diameter (.04″) helium-neon lasers and two photodiode detectors. A Philips multichannel analogue recorder is used to record the signals from the photo-diodes.

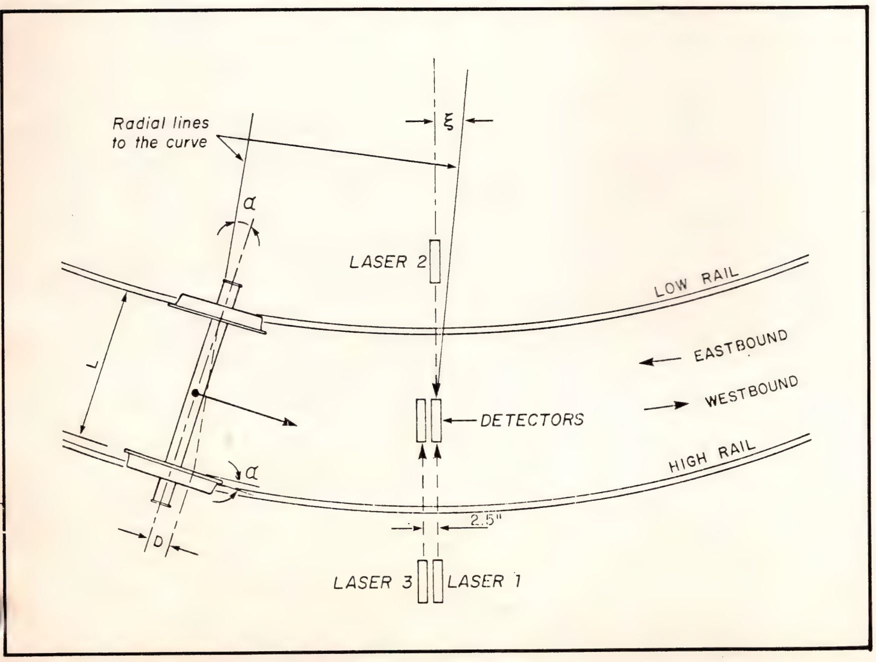
These signals trigger time counters which measure the time interruption intervals from which the angles can be calculated. The experimental design works, and will now be modified to include a micro-computer for calculating angles of attack instantaneously and a printer to print the results in real time.

The apparatus, capable of measuring angles-of-attack with accuracy of 2.5 minutes, was installed at the Facility for Accelerated Service Testing (FAST) near Pueblo, Colorado, last month to support an AAR-FRA research investigation.

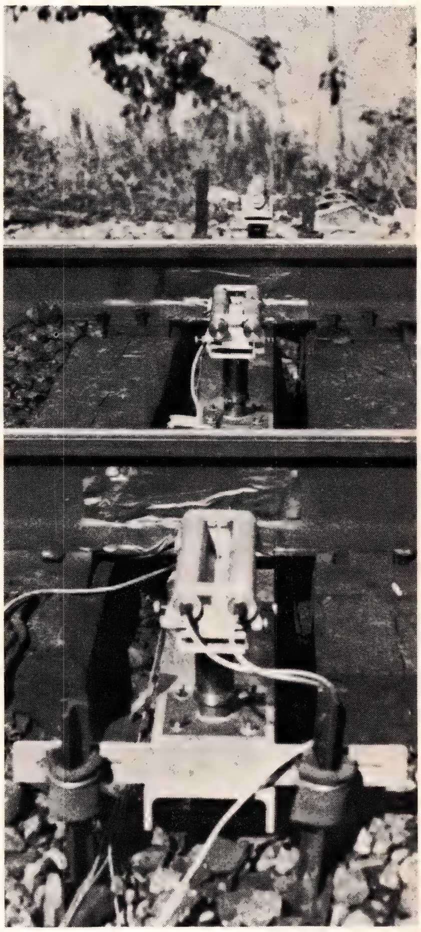
Mr Bethune believes that the angle of attack measuring system may prove invaluable as a maintenance tool. It can quickly detect wagons that are "bad performers" in a fleet, and ensure their replacement or modification.

The laser measuring system also provides a means of comparison between the various "improved" bogie designs. "In fact," says Mr Bethune, "that's how it all started. As manufacturers and designers continue to develop new configurations — all claiming to be best — additional test or service information will be required."

In order to obtain quantitative data on various bogies, the railway's research department — at the request of the mechanical people — developed a two-phase plan. The first phase consisted of short-term field tests on curving performance and high-speed lateral stability in order to identify the most effective design.



Alignment of lasers and detectors used in angle-of-attack measurements.



The second phase of the programme will consist of long-term, in-service testing of the most promising candidate bogies. Test conditions will be carefully controlled and monitored in order to provide necessary data on bogie and wagon body maintenance.

CP Rail believes that the development of the laser as a test and maintenance tool is an important step toward making railway operations safer and more efficient than ever before.

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Unloading rails for the construction of the Port Augusta-Whyalla Railway. Photograph by courtesy Australian National Railways.

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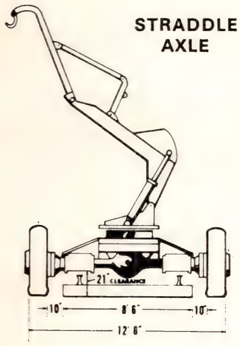

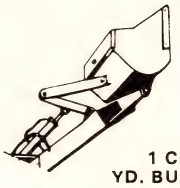

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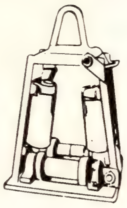

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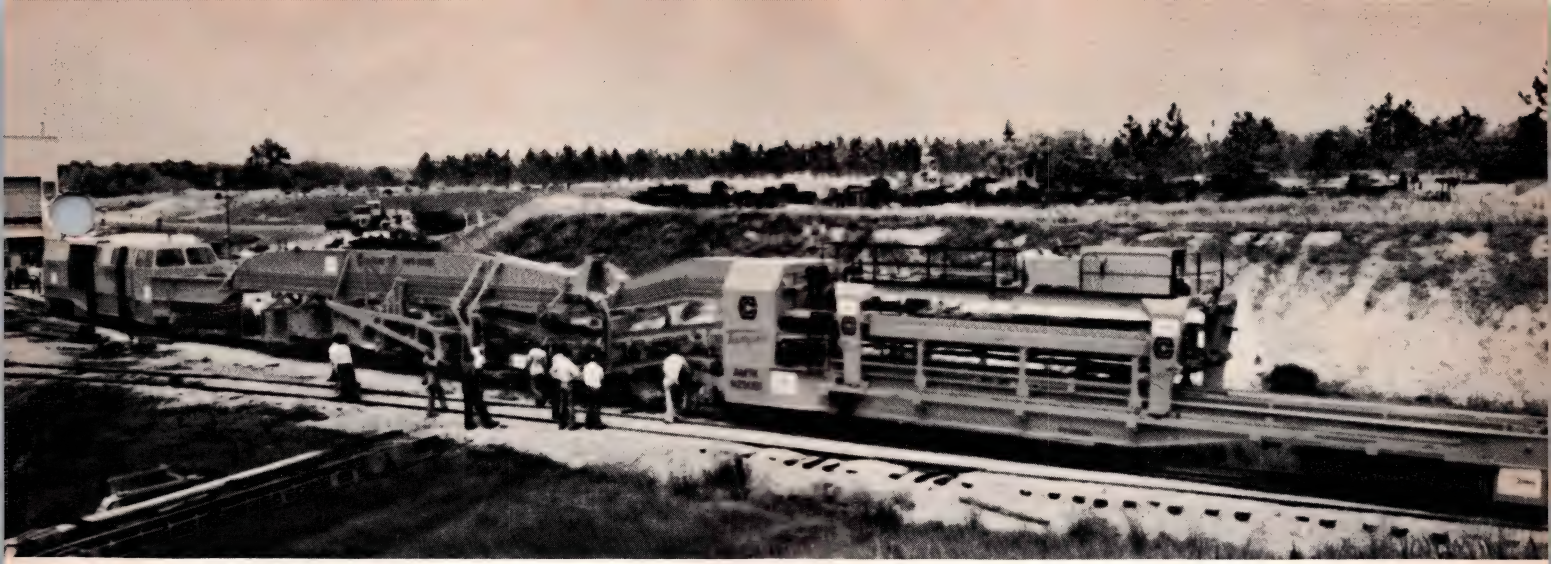

An Australian-built Track Renewal Train

A track renewal train, similar to that being manufactured for Hamersley by Canron and Vickers Ruwolt, undergoing final tests outside Canron's U.S. headquarters.

Australia's first locally-built track renewal train has been fabricated at Vickers Ruwolt's Richmond works in Victoria. The $1 million machine is being built by the Melbourne-based Canron Railgroup for Fluor for use on the Hamersley Iron Railway in the north-west of Western Australia. It will work on a seven-year programme of track upgrading between the port of Dampier and the mine site at Mount Tom Price in the Pilbara.

The P-811 track renewal train consists of three main sections — power car, working beam and handling wagon — which have a total length of approximately 67 metres, and are used in conjunction with flat cars, stacked with sleepers.

The 160 tonne train can reach a production rate of 600 metres per hour, approximately thirty minutes after its arrival at the work site, a rate which includes the reclaiming and replacing of the old track, sleepers and rail.

Track renewal begins with the unloading of the new continuous welded rail on either side of the track. The fastenings are then removed and the old rails are spread by the machine to enable the old sleepers to be picked up and accumulated on the handling wagon to be transported to the flat cars. The ballast bed is ploughed and consolidated.

New sleepers are simultaneously picked up from the flat cars and placed on a handling wagon, from where they are transported by conveyors and precisely positioned on the newly formed ballast bed. The new rails, that have been laid out ahead of the machine, are then threaded on to the new sleepers.

The main power unit of the P-811 track renewal train is a 400 h.p. General Motors diesel engine, driving an alternator and hydraulic group which supplies the power for the traction system, conveyor units, the sleeper pick-up, consolidator, and sleeper drop-off mechanism, and rail handling.

A self-propelled, 11 tonne portal gantry, capable of handling 24 sleepers at a time at 20 km/h, is used to transport the old and new sleepers from the flat cars to the handling wagon.

Canron Railgroup are basically an assembly shop, and when the time came to fabricate the main frames, tenders were called. Vickers have already delivered the power car, renewal beam and handling wagon, giving Canron ample time to meet their handover date early next year.

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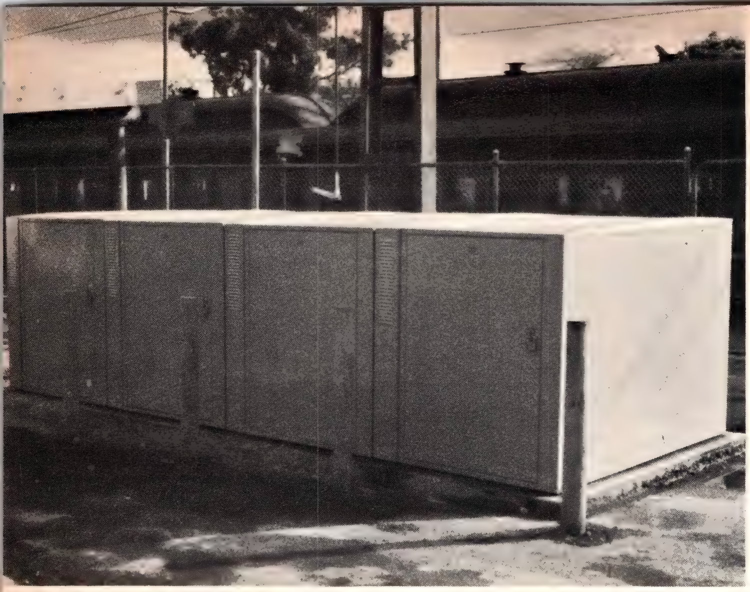
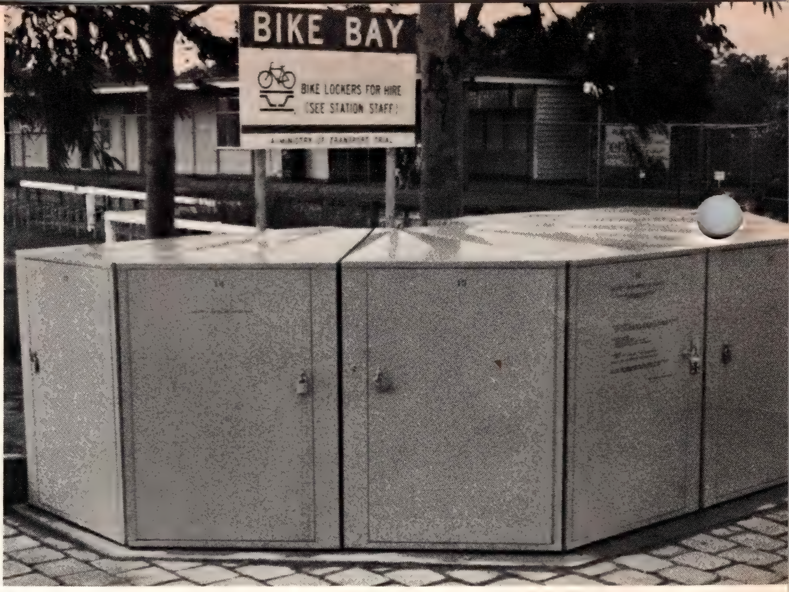




Melbourne Suburban "Bike-Rail" Experiment

Improved bicycle storage, installed at VicRail's Box Hill, Nunawading and Mitcham stations, has proved popular with cyclists.

Bicycle lockers and improved stands have been installed on a 12-months trial as part of the Melbourne Bicycle Strategy, a planning study commissioned by the State Government. The object is to see whether more secure storage facilities will encourage people to travel by bicycle and train.

The lockers, which give full protection from the weather, and also from theft or damage, are modelled on those which have proved popular at railway stations and other cyclist destinations in U.S.A.

Key-operated, they are leased on a monthly ($2) or quarterly ($5) basis; and coin-operated lockers (20c) for occasional use are available at Box Hill and Nunawading. Lockers provide security for parcels, pumps or weather-proof clothing.

The new stands hold the cycles firmly, with both the wheels and also the frame secured. The cyclist carries the padlock; the cable locking the wheel is part of the stand.

Improved weather protection, for both the new stands and existing racks, is also being planned.

Tenders and Contracts

Tenders invited include:

QR — Design, construction, supply and delivery of five first-class roomette sleeping cars, and five economy class sitting cars; closing 29 October, 1979.

VR — Manufacture, supply and delivery of 11 (eleven) 2-2 kv, 50 hz, vacuum switchgear assemblies; closing 26 September 1979.

Recent Contracts include:

QR — Construction of trackwork, roadworks and associated works for Clinton Coal Facility Spur Line Power Station Loop Extension and Callemondah Locomotive Depot and Yard — Gregory Project: Roberts Construction (Pacific) Pty Ltd ($1,297,066).

QR — Construction of railway bridge, culverts and earthworks for extensions to Bundaberg Station Yard: Moggill Constructions Pty Ltd ($412,494).

QR — Rewind and/or repair of diesel electric locomotive traction motor armatures, for period 1 June 1979 to 30 May 1980: Westinghouse Electric Queensland Ltd ($259,000); Hamilton & Dickson Pty Ltd ($203,600).

QR — Supply and delivery of requirements of freight car paints, for period 1 May 1979 to 30 April 1980: Taubmans Pty Ltd ($135,800).

QR — Supply and delivery of two front end loaders: Industrial Sales and Service (Q'land) Ltd ($120,776).

QR — Construction of reinforced concrete invert pavements in corrugated metal pipe culverts on Moura Short Line: Queensland Stone Construction Pty Ltd ($110,001).

QR — Construction of deviation between Midgee and Gracemere: Jennings Industries Ltd ($2,022,657).

QR — Non-destructive testing of rail for period of five years commencing 1 September 1979: Automation Industries Pty Ltd ($483,000).

QR — Construction of railway bridge, culverts and earthworks for deviations at Mundic Creek and Beta Gully: A. H. Hodge Constructions Pty Ltd ($450,032).

QR — Supply and delivery of 36,000 dogspikes: A. M. Bristow Pty Ltd ($257,400).

QR — Manufacture, supply and delivery of fifty cast-steel high-speed freight bogies for Class 'NA' wagons: Commonwealth Steel (Moorooka) Pty Ltd ($205,480).

VR — Design, supply, delivery, installation and commissioning of air conditioning and ventilation services in Metropolitan Train Control Centre (Metrol 2), Batman Avenue, Melbourne: Almak Air-Conditioning Pty Ltd ($499,686).

VR — Supply of plant mixed concrete to Melbourne Underground Rail Loop: Pioneer Concrete (Vic) Pty Ltd ($172,849).

VR — Collection, carriage and delivery of goods and parcels between Wangaratta Freight Centre, Wangaratta Parcels Office and Wangaratta: R. Ham & Son ($106,000).

WAGR — 500 wagon wheels: Bradford Kendall Foundries Pty Ltd ($206,600).

WAGR — 500 wagon wheels: Commonwealth Steel Co. Ltd ($164,425).

WAGR — 500 wagon tyres: Commonwealth Steel Co. Ltd ($88,895).

The Window Seat

Mr K. J. (Keith) Dickinson, who has been appointed Westrail's Assistant Chief Traffic Manager (Works & Research), started as a Junior Clerk at Midland during October 1938 and rejoined the organisation after war service, serving in many roles throughout country districts until appointed Train Controller, Perth, in 1955.

He became Assistant District Traffic Superintendent, Narrogin, ten years later and District Traffic Superintendent, Geraldton, in 1968. In 1972 he was transferred to Perth as Relief District Traffic Superintendent, taking over the reins as District Traffic Superintendent two years later.

Since his appointments in Perth, Mr Dickinson has been closely associated with the Works & Research section of the Traffic Branch in the area of planning and was appointed Planning Officer in March 1978.

During his 40 years with Westrail, Mr Dickinson has worked in all districts and has progressed through all levels in the Traffic Branch. He is a member of the Chartered Institute of Transport.

Pandrol Australia Pty Ltd has recently appointed **Mr R. W. Stewart** to the position of Manager, Market Engineering, and **Mr E. H. Williams** as Manager, Western Australia.

Prior to his appointment Mr Stewart was an Associate of Gutteridge, Haskins & Davey, Civil Engineering Consultants in Brisbane. He has also held senior appointments with the Snowy Mountains Engineering Corporation in Indonesia and the Philippines, Hamersley Iron Pty Ltd and Comalco Ltd during which time he has been involved with a wide variety of engineering, particularly with transportation, especially railways. Mr Stewart served ten years in the Australia Regular Army (Royal Aust. Eng.) and held both field and staff appointments in Australian and S. E. Asia. He is a graduate of the Royal Military College, Duntroon and held the rank of Major.

Mr Williams recently retired from Hamersley Iron Pty Ltd where he was General Superintendent, Railway. Prior to this he served with the N.S.W. Government Railways for a period of thirty years, during which time he held a number of positions in the mechanical branch. Mr Williams will be based in Perth, W.A. and will be responsible for the company's new Maddington factory and for market and customer services in Western Australia.

* * *

Westrail's stewardesses have brought a new dash of colour to "Prospector" and interstate passenger train services to Kalgoorlie. It comes from a new uniform, the overall colour of which is "riot red" in polyester/viscose material.

The dress has a black halter neck with white piping and is worn over a white blouse. The jacket has plain lines in red with a black and white piping motif. A hat, also in "riot red" with black piping on the rim completes the new Westrail stewardess' outfit.

The uniform was introduced to coincide with the Travel League of Western Australia's special "Prospector" train to Toodyay and return in August.

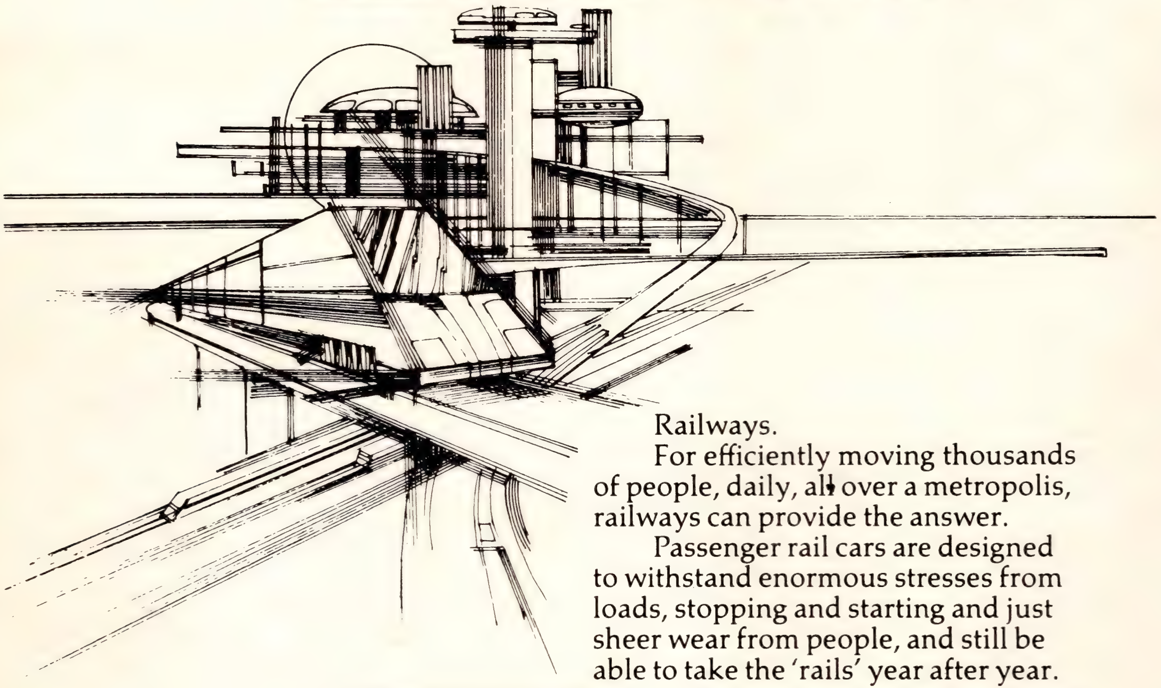
Pictured on the steps of "Prospector" are: (from the top) Sona Fraser, Robyn Cresswell and Margaret Amy.

* * *

The centenary of the dining car. The first railway dining car was introduced by the Great Northern Railway in 1879. It ran between Leeds and London (Kings Cross) and is being commemorated by a special train on the same route on 13 September.

The special, made up of various historic catering vehicles, will then visit major provincial rail centres.

THE SHAPE OF MASS TRANSIT



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CSS/38/7709

Westrail's Marketing Awareness. Throughout its first century, Westrail has kept in step with demands by the State to handle greater tonnages and more varied commodities, until today it has become Western Australia's largest transport operator.

In previous years it was guaranteed a high proportion of its business through regulation of traffic to rail; but this situation is changing and traffic will, to a significantly greater extent, be subject to competition.

Recently the Commissioner for Railways, Mr W. I. McCullough, pointed out that increase in competition would call for a change in approach and in outlook by both administration and staff at all levels of the organisation, each giving greater emphasis to marketing.

"This will necessitate identifying and selling the types and standard of services which our clients require, involving an on-going programme of re-organisation and development of skills and techniques," Mr McCullough added.

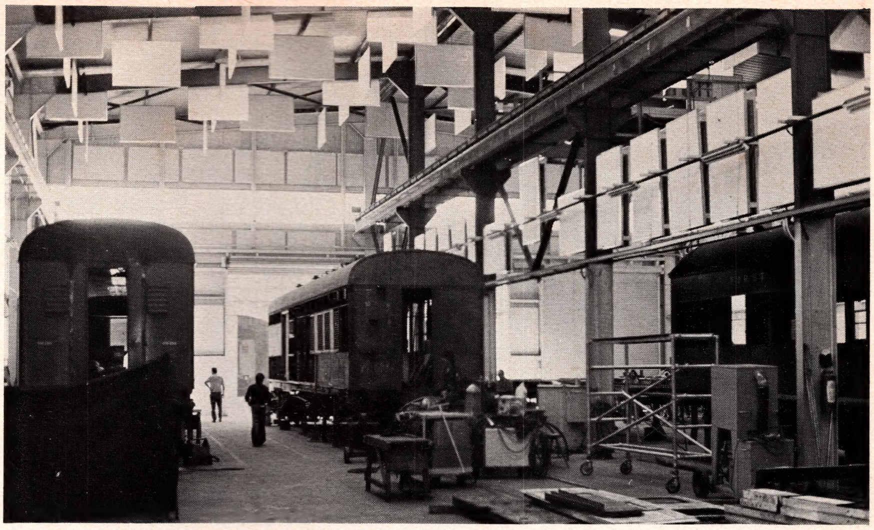
As a first stage, the name Commercial Branch has been changed to Marketing Branch, and the title of its head, Mr Brian Copley, amended to Marketing Manager.

The change of name was the first step in a realisation by Westrail of its need to become a fully orientated and developed organisation in respect to a total concept of marketing, as it affects all operations.

"We must be aware of the fact that everybody plays a part in marketing — from the aluminium welder putting his best effort into the manufacture of new wagons to track teams repairing the line after a winter washaway, from a shunter marshalling trains with care to avoid damage to the customer's goods to a clerk dealing promptly with correspondence. Every staff member, in some way, is involved in marketing.

"A change of name from Commercial to Marketing is the first small step in a revised and more vigorous role that all of us are about to play.

"To attain the corporate objective of a more market-orientated Westrail there will also be a need for a co-operative industrial climate in which changes to modernise our services and our approach to competition can be made in an atmosphere of understanding and awareness of the problems ahead."



New noise control panels. The PTC recently awarded Soundguard Pty Ltd a contract for the design, manufacture and installation of new acoustical treatment in the Boilermakers' Shop at the Eveleigh Carriage Works in Sydney.

The installation replaced an asbestos-based spray material which was removed to avoid possible health risks; and the entire project, from initial investigation through fabrication, installation and testing, was completed in four weeks.

The Boilermakers' Shop can accommodate more than a dozen railway carriages and is the equivalent of three storeys in height. After detailed investigation of reverberation in the building, Soundguard installed over 1000 m² of prefabricated modular absorption panels. Each panel comprises a galvanised steel frame (1800 mm x 1200 mm) with a fibreglass infill, faced with light-coloured perforated vinyl (which increases light reflection and allows the panels to be spray-cleaned).

The treatment lowered the reverberation time from 3.5 to 1.7 seconds, and significantly reduced noise levels due to hammering grinding, chipping and other boilermaking operations.

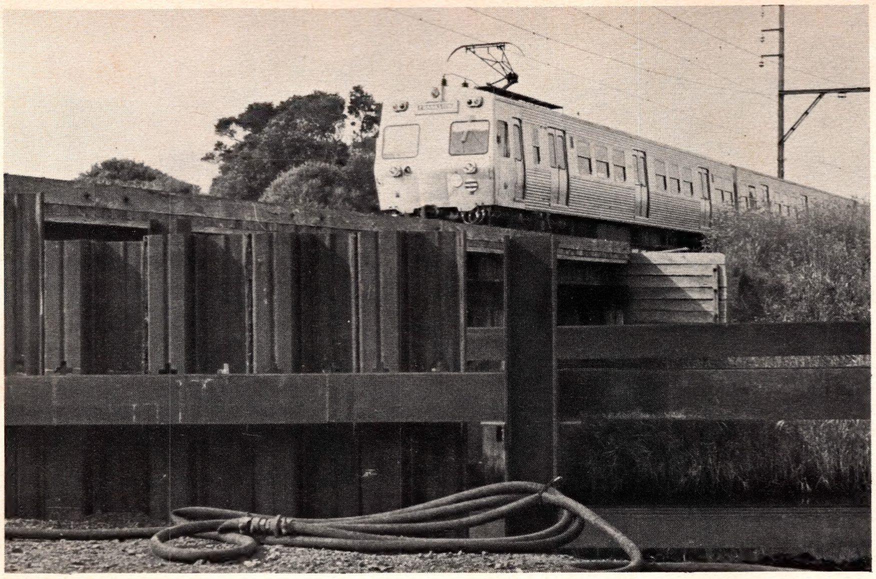
Dual-gauge concrete sleepers have been laid by Westrail for test purposes at Mundijong on the narrow-gauge 20 tonne/axle bauxite line running between Jarrahdale and Kwinana. The new 60 kg/m rail, used in the Kwinana to Koolyanobbing upgrading programme, is also being used on this 260-metre test area, located 45 km south of Perth.

The test strip has been laid to enable Westrail Engineers to study the behaviour of the sleepers under heavy duty narrow gauge traffic. It is the heaviest-duty narrow gauge section of track ever laid in Australia.

* * *

The Geelong Steam Preservation Society newsletter, *The Commoner,* for May 1979, is sub-titled "The Centenary Special". The centenary is that of the Geelong-Queenscliff railway line which was opened on 21 May 1879 and closed early in November 1976.

The issue carries three well-illustrated articles: a history of the Geelong-Queenscliff line; a survey of society activities and of the outstanding collection of rolling stock; and a review of the Bellarine Peninsula Railway project — the restoration and re-opening of the line between Queenscliff and Drysdale, on a narrow-gauge — on which society members are busily engaged, with assistance from both state and local government.



A Medium-Duty Steel Sheet Piling, Lysaght Brownbuilt Industries LP200/80, meets a long-standing need for a medium-duty multi-purpose section in civil engineering and construction jobs such as retaining walls, trench or excavation support and foundation formwork.

In the past, because no medium-weight section was available, many projects have used the heavy sections for jobs which did not require such a high degree of piling strength. The costs of handling, driving and removal of the heavy sections thus became an unnecessary burden.

The new LP200/80 piling, a lighter alternative requiring only simple compressed-air driving plant to install, has an effective cover of 350 mm per sheet giving an overall wall thickness of 200 mm. It is accurately cold roll formed from 6 mm, HR280 steel (280 MPa minimum yield stress) and is available in stock lengths of 5, 8, 12 and 14 metres or custom-cut lengths to order. The clutches on all LBI steel sheet pilings are compatible so that combinations of light, medium and heavy duty sheets can be used if required.

One of the first applications for the LP200/80 medium duty piling was a bridge reconstruction project being completed by VicRail over the Kananook Creek at Seaford, Victoria. Here LP200/80 piling in eight metre lengths was pneumatically driven to a depth of six metres to provide embankment protection and pier support for the rail bridge across the floodway of the creek.

PA Systems for PTC suburban trains. A $1 million contract has been let by the Public Transport Commission to Commonwealth Engineering (NSW) Pty Ltd for the supply and installation of PA Systems in 361 double-decked suburban carriages. This is an extension of PTC policy of keeping passengers fully informed wherever possible, in regard to train irregularities and other matters of interest to customers.

The first double-decked suburban trains to be equipped with PA are the 150 carriages now being built by Goninan & Co. progressive deliveries of which started late last year. The equipment, which provides communication between driver/guard and guard/passengers is similar to that installed in the double-decked interurban trains operating on Blue Mountains/Central Coast services.

Under the recent contract, PA equipment will be installed in 258 Comeng carriages already in service, 53 Tulloch cars in service, and 50 Comeng carriages currently in production.

Major workshop and servicing depots are being established at the important PTC centres of Bathurst and Lithgow, both on the "Indian-Pacific" route west of Sydney.

A new Wagon Repair Workshop at **Bathurst,** which will cost about $7.8 million, is part of the PTC's $68 million Workshop Modernisation Programme. Extensive earthworks have been completed and the successful tenderer to build the complex, Citra Constructions Ltd, has moved on to the site.

The total area of the workshop complex will be about 7,100 square metres, with associated external concrete paved roadways and parking areas of about 9,000 square metres. In addition to wagon repairs, the new workshop is being equipped to overhaul two locomotives at the same time. It is expected to be operational by September 1980.

Tenders were recently called for construction of Stage 1 of a Diesel and Electric Locomotive Servicing Depot at **Lithgow,** and for construction of the associated car park and access road.

The contract for Stage 1 will involve:

- Construction of two steel-framed metal-clad service buildings with concrete floors, about 25 m x 7 m and 27 m x 13 m; each building to have covered embedded rail tracks.
- Provision of a Fuel Oil Depot with two 350,000 litre steel storage tanks.
- An Effluent Plant comprising pollution control with full pH correction equipment and chemical treatment, with a capacity of two 22,500 litre elevated receiving tanks.

Incorporated into the buildings and associated works are integrated hydraulic and mechanical services which are necessary for the sanding, fuelling and operation of diesel and electric locomotives.

The other contract provides for sealed car parking, 200 m x 25 m, to accommodate 125 cars, and an access road, 6 m wide x 280 m long, together with widening of Chifley Drive at the entrance.

* * *

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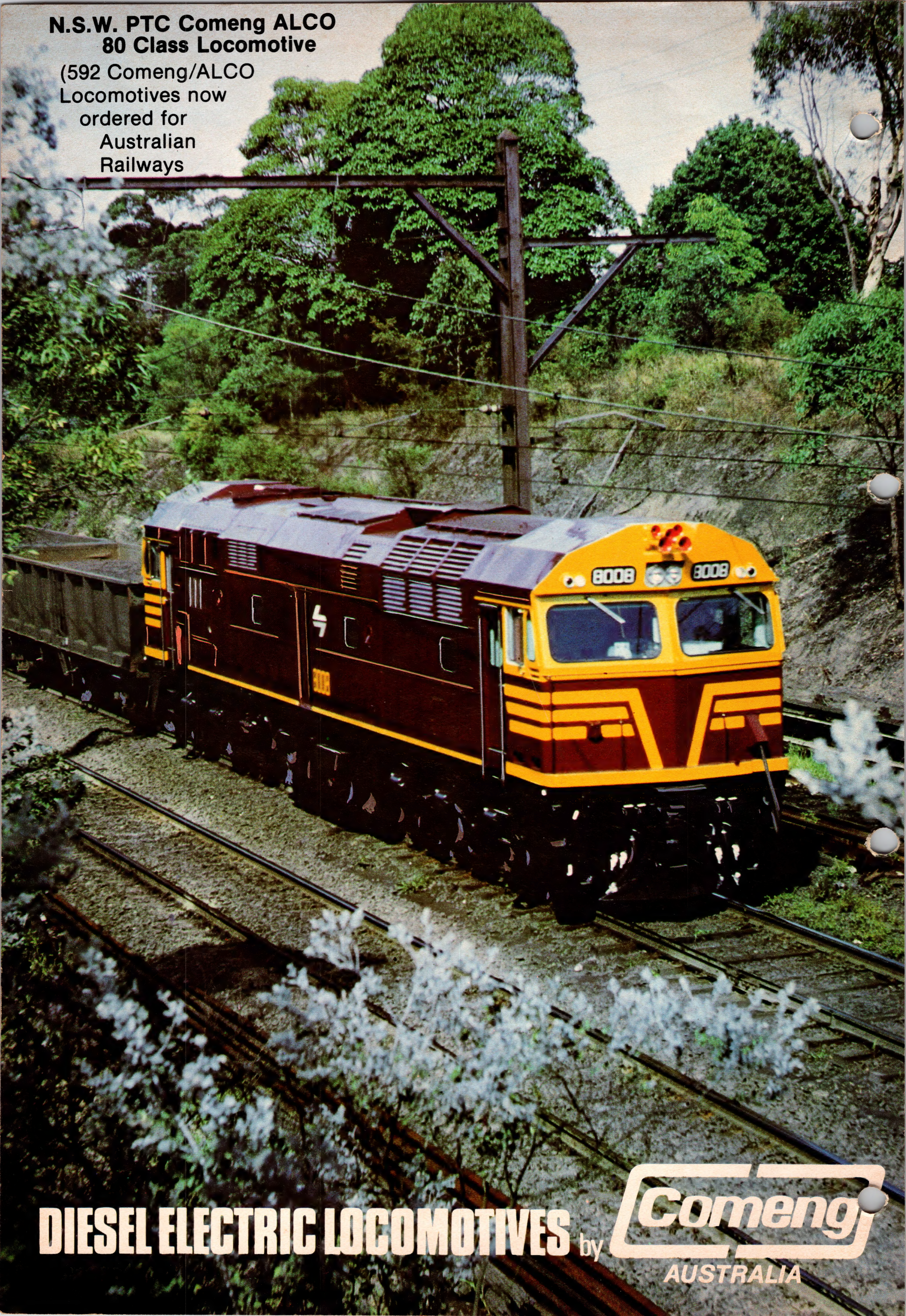

N.S.W. PTC Comeng ALCO 80 Class Locomotive

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